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STATE CIVIL SERVICE COMMISSION

MANUAL OF EXAMINATIONS

FOR THE

STATE AND COUNTY SERVICE

(Revised to July 1, 1903)

Your inquiry is probably answered in this manual. Search carefully before making written inquiry. If compelled to write, state whether you have the manual or not. . . . . .

The Reports of the Commission, showing its work and containing the civil-service act, rules and regulations, can be consulted at the principal public libraries.

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THE CIVIL SERVICE LAW.

The work of the Civil Service Commission is governed by the "Civil Service Law," which is chapter 370 of the Laws of 1899. It provides for a State Civil Service Commission of three members which is charged with the duty of making rules governing appointments and promotions in the classified service of the state, and of its civil divisions except cities, and of holding examinations for such appointments. The law also provides for a municipal civil service commission in each city of the state with similar duties respecting the civil service of the city. The rules of the State Commission become effective on the approval of the Governor and those of the municipal commissions on the approval of the mayor of the city and of the State Commission.

The classified service is defined by the law and includes practically all subordinate offices and positions in the public service except officers and employees of legislative bodies (including boards of supervisors and councils or boards of aldermen in cities), military employees, and superintendents, principals and teachers in public schools. Positions in the classified service are placed by the law and rules in four classes, viz.:

The exempt class, containing positions to which appointment may be made without certification or examination by the Commission.

The competitive class, to which appointment must be made from the eligible lists resulting from open competitive examinations held by the civil service commissions, by transfer or promotion from some other position in the same class, or by reinstatement of some person previously separated from the service.

The non-competitive class, to which appointments are made after non-competitive examination by the Commission of persons nominated by the head of the department.

The labor class, to which appointments in the cities are made from lists of applicants registered in the order of their applications; in the state and county service appointments to positions classified as labor positions are made without registration or examination in the same manner as to positions in the exempt class.

The Commission has no power of appointment or removal except for positions in its own office. It has no control over appointments to exempt positions, nor over nominations for non-competitive positions. For positions in the competitive class, the Commission holds competitive examinations throughout the state from time to time in accordance with the needs of the service. The names of successful competitors are placed on the eligible lists in the order of their relative standing in the examination, except that veteran soldiers, sailors and marines, honorably discharged from the service of the United States in the late civil war, who are successful in the examinations, are entitled to be placed at the head of the eligible lists and to be preferred in certification and appointment over others. When an appointing officer

notifies the Commission of a vacancy, three names are certified from the head of the appropriate eligible list, from which he selects one for appointment. His discretion in making such selection is absolute, except that the law requires that it shall be made without regard to political considerations.

This Manual contains descriptions and specimen questions of the more important open competitive examinations held by the Commission, and full information as to the method of entering the public service through examination. Most of the questions which correspondents ask are answered herein more completely than they can be by correspondence. Persons seeking information should, therefore, study the Manual carefully before making written inquiry.

CIVIL SERVICE OF COUNTIES

Under the provisions of section 9 of the Civil Service Law, the State Civil Service Commission, with the approval of the Governor, has extended the state civil service rules to cover the civil service of the counties of Erie, Kings, New York, Queens and Richmond, and has classified the various offices and positions in such service. The date of this extension and classification was June 16, 1900. Appointments to positions in the county service classified in the competitive class are made from eligible lists prepared after examinations held by the State Commission. So far as they are applicable the general eligible lists of the State Commission will be certified for county positions, with the restriction that only residents of the county will be certified for the county service of any county. The lists for apothecary, bookkeeper, chief engineer, clerk, court attendant, court clerk, court stenographer, electrical engineer, fireman, junior clerk, matron, messenger, officer of institution, page, physician, steam engineer, stenographer, watchman, are mentioned as among those especially applicable to county positions, though the Commission will certify any appropriate eligible list for a position in the county service and will hold special examinations for such positions only when there is no appropriate list already established. Persons applying for county positions will, therefore, be notified for the general examinations for state and county positions so far as they are applicable.

CIVIL SERVICE OF CITIES

This Commission does not receive applications for admission to the civil service of the cities of the state. All such applications should be directed to the secretary of the municipal civil service commission in the city where employment is desired.

THE UNITED STATES CIVIL SERVICE

The New York State Civil Service Commission has nothing to do with examinations for United States civil service positions. For information concerning appointment to and examinations for the federal service, apply as follows:

For mechanical trades and minor positions in the engineer department, navy yards, ordnance department or government hospital for the insane, apply to the local board of examiners for the engineer district, navy yard,

ordnance establishment or hospital, and for minor positions in public health and marine hospital service, to the medical officer at the hospital or station where employment is desired.

For all clerical or professional positions in the services named above, and for all positions in the railway mail, internal revenue, Philippines and departmental services apply to the United States Civil Service Commission, Washington, D. C.

For all positions in the post-office or custom-house service apply to the local board of examiners, and for the position of rural free-delivery carrier, to the postmaster, at the post-office or custom-house, and for all positions in the lighthouse service, to the inspector of the lighthouse district, in which employment is desired.

EXEMPT, NON-COMPETITIVE AND LABOR POSITIONS

The positions in the exempt and non-competitive classes are enumerated in the civil service rules, and the positions classified as laborers are enumerated in the regulations. The Commission does not receive applications for such positions and as a rule cannot answer inquiries concerning them. Such applications and inquiries should be addressed to the superintendent of the institution or the head of the department having the power of appointment to the position.

DATES AND PUBLIC NOTICE OF EXAMINATIONS

There are no regular dates for any examinations held by the Commission. Dates are fixed for the various examinations in accordance with the needs of the service and public notice is given about one month in advance by notices mailed to newspapers in all parts of the state for publication and also by notices posted in the larger post-offices throughout the state. Inquiries as to the date of examination for any position cannot usually be answered until such notices are issued. About four weeks prior to each competitive examination a detailed circular of information is issued stating the positions for which examinations are to be held, the subjects of examination, preliminary requirements, etc., and this is mailed to all persons having applications on file and to all who request information concerning the examinations covered by the circular.

Special examinations will be called only when there is need for them to fill existing or prospective vacancies, and never upon the request of an applicant.

MAILING LIST

There are many positions in the state and county service in which vacancies occur very infrequently, perhaps only once in several years, and for which examinations are correspondingly infrequent, and others for which the large number of applicants renders annual examinations unnecessary. The names of persons making inquiry concerning such examinations will be placed on a mailing list for notice of the examination when held. Persons making general inquiry should specify as nearly as possible the nature of the positions or examination in which they are interested so that their inquiries may be intelligently answered.

APPLICATIONS

All candidates for examination are required to make out applications on regular blanks furnished by the Commission. Applicants should use great care in executing their applications, answering every question on the blank, and carefully reviewing the jurat, physician's certificate, vouchers and application to see that all blanks are filled and all questions answered, and should forward them at the earliest date possible after the announcement of the examination. The object of the application is to show that the applicant is entitled to enter the examination by age, residence, citizenship, etc., at the time of the examination, and also to furnish the address of the applicant for such notices as the Commission needs to send. It is, therefore, important that the Commission be notified of any change in the address or residence occurring after the application is filed.

The Commission will receive applications for any competitive position at any time, but unless received at the office of the Commission by noon of the fifth day prior to the date set for the examination, they may not be accepted for that examination and the candidate may have to wait for the next examination. So far as practicable the Commission will notify and examine persons who are unable to complete their applications and file them by the time specified, provided notice by letter or telegram of their desire to be examined, stating the place and kind of examination desired, reaches the office in time to permit the shipment of supplies for the examination, *but it cannot agree to do so, nor accept responsibility* for delay or miscarriage of requests, circulars, applications or notices. Requests for application blanks and information should be addressed to "Chief Examiner, State Civil Service Commission, Albany, N. Y.," and should if possible be sent so as to reach the Commission ten days before the date of examination, so as to insure ample time for completion and return of application.

Applicants of record will be notified by mail of the time and place of examination, usually about ten days in advance. If sickness or other sufficient cause prevents an applicant from attending the examination for which he is notified, he may, by returning his notice, have his application kept on file for a future examination, provided such examination occurs within one year from the original filing of the application. Otherwise an application is good for only one examination and an applicant having entered one examination must file a new application for a subsequent examination either of the same or another kind.

PERSONS WHO WILL NOT BE EXAMINED

No person is eligible to a competitive examination—(a) who is not a resident and citizen of New York state (except as indicated below), (b) who is not within the age limitations prescribed for the examination for which he applies, (c) who is physically disqualified for the service which he seeks, (d) who is addicted to the habitual use of intoxicating beverages to excess, (e) who has been dismissed from the public service for delinquency or misconduct within one year preceding the date of his application, (f) who has failed, after probation, to receive absolute appointment to the position for which he again applies, within one year from the date of the expiration of his probationary

service, (g) who, within nine months has taken the same kind of examination for which he wishes again to apply, (h) who has made a false statement in his application or has been guilty of fraud or deceit in any manner connected with any application or examination under the Commission, or who has been guilty of crime or infamous or notoriously disgraceful conduct.

Non-residents or non-citizens may be admitted to examination for the following positions: Attendants, nurses and orderlies in asylums and hospitals and similar institutions; also for positions as scientists, technical and trade instructors and positions requiring special training and education, provided that if the eligible list resulting from any examination held for such a position contains the names of three or more persons who are citizens and residents of New York state, such persons shall be preferred in certification to non-residents.

AGE LIMITS FOR POSITIONS IN THE COMPETITIVE CLASS

No application for examination will be accepted unless the applicant is within the age limitations fixed herein for entrance to the position for which he seeks to be appointed. The age limitations for entrance to positions in the different branches of the service are as follows:

Stenographer, telegrapher, stenographer and telegrapher, messenger, chainman, tracer, minimum age, eighteen years; regents' clerk, minimum age, sixteen years; page, minimum age, fourteen years, maximum, eighteen years; junior clerk, minimum age, sixteen years, maximum, twenty-one years; pupil nurse, minimum age, twenty-one years, maximum, thirty-two years. For all other positions the minimum age limit is twenty-one years, with no maximum limit. (As amended September 27, 1899; January 24, 1900.)

PRELIMINARY REQUIREMENTS AS TO EDUCATION, EXPERIENCE, ETC.

No application for examination will be accepted unless the applicant satisfies all the preliminary requirements as indicated in the description of the particular examination. For professional positions candidates will be required to have the licenses required by law for practice of their respective professions in the state of New York. For positions in the Regents' office candidates must be graduates of a recognized high school or have an equivalent education, according to the standard of the Regents. For positions involving a knowledge of any trade candidates will be required to present evidence of having served the customary apprenticeship at such trade.

WHERE EXAMINATIONS MAY BE TAKEN

The Commission is required by law to hold examinations for all positions, except those the examinations for which "require special tools, machinery, appliances or laboratory facilities," in the following cities and towns:

Albany	Hornellsville	Newburg	Rochester
Amsterdam	Ithaca	New York	Syracuse
Auburn	Jamestown	Ogdensburg	Utica
Binghamton	Kingston	Olean	Watertown
Buffalo	Lockport	Plattsburg	
Elmira	Malone	Poughkeepsie	

WHAT APPLICANTS SHOULD BRING TO EXAMINATION ROOM

Persons taking the stenographer and typewriter examinations must provide themselves with typewriting machines and stands or tables; those taking the bookkeeper, draughtsman, or other examinations requiring the use of instruments, must furnish the instruments required. All competitors must provide themselves with pens, penholders, pencils, erasers, ink and blotters. Competitors should not bring any paper for use in the examination room, as sufficient blank paper will be furnished for all purposes.

Each applicant *must present* his notice of examination in order to be admitted to the examination.

CHANGE OF ADDRESS

Applicants and eligibles must keep the Commission informed of any change of postoffice address. A failure to do so will be treated as the fault of the applicant or eligible, and may result in his losing an opportunity of examination or appointment. Requests to have the address changed should be made by letter, and should state whether the applicant has been examined or not. Such letter should relate only to the change in address.

RULES GOVERNING COMPETITORS IN EXAMINATIONS

The following is a copy of the rules which are given to each competitor at the beginning of every examination:

1. You will find your examination number in the upper right-hand corner of the declaration sheet which will be given you. *Write that number on each sheet of the examination. Fill out all blanks on question sheet before handing it in.*

2. See that each sheet received by you pertains to the kind of examination which you are taking, and take care that you do not omit any of the sheets. Competitors are held responsible for errors and omissions.

3. Do not leave the room, if possible to avoid it, with a sheet before you unfinished, for if you do, the sheet will be taken up and will not be returned to you. Competitors are allowed to leave the examination room for luncheon on the completion of any sheet of questions after 12 o'clock. *No additional allowance of time* will be granted on account of such absence.

4. *Read carefully the printed instructions on each sheet before commencing work thereon.*

5. If necessary, the back of a sheet may be used to complete your work, unless directions to the contrary are printed on the sheet.

6. A question sheet spoiled by you cannot be exchanged for another of the same kind.

7. Perform all work on each examination sheet with ink.

8. Pencil and scratch paper may be used in preliminary work, except in the spelling and dictation exercises, which must be written with ink directly on the examination sheets from the dictation of the examiner.

9. Use no scratch paper except that furnished by the examiner in charge, and, on completing an examination sheet, hand him the scratch paper pertaining to that sheet. Have all your work complete on the examination sheet,

however, as the scratch paper is collected, not for consideration in the marking, but for destruction.

10. No helps of any kind are allowed unless expressly stated to the contrary on the question sheet or in the instructions sent to candidates. Before the examination is commenced, hand to the examiner any written or printed matter that you may have which might, if used, aid you in your work.

11. *All conversation or communication between competitors during the examination is strictly prohibited.*

12. Do not copy or attempt to copy from the work of any competitor, or permit any competitor to copy from your work, or to read the examination sheets in your possession.

13. All necessary explanations will be made to the whole class. Examiners are forbidden to explain the meaning of any question or to make any remarks or suggestions that may assist in its solution.

14. From one to three months may elapse before you are notified of your standing. No unnecessary delay will occur in marking your papers, and you are requested not to increase the labors of the Commission by making inquiries in regard to your standing, unless you have reason to believe that the notice to you has miscarried.

15. Copies of examination papers or examination questions must be handed in with the answers and *must not be taken from the room.*

[N. B.— A violation by you of the instructions contained in paragraphs 10, 11 and 12 will be deemed sufficient cause for canceling your papers. You are requested to report to the examiner any irregularity that may come under your notice during the examination.]

METHOD OF MARKING EXAMINATION PAPERS

The following method is observed in marking examination papers by the examining division of the Commission:

After an examination is held, the papers are arranged by sheets or subjects and are forwarded under seal to the Commission. When they are reached in the order of marking, they are distributed by sheets to the examiners, Examiner A being given all of sheets 1, Examiner B all of sheets 2, Examiner C all of sheets 3, and so on. The work of each examiner is usually reviewed by another. When all of the papers of an examination have been marked, those of each competitor are then for the first time assembled or brought together, his general average is ascertained, his declaration envelope is opened, and the declaration sheet to which he has signed his name is attached to his examination papers. The identity of the competitor, therefore, is not disclosed *until his papers have been marked and reviewed and his general average determined.* The only exception is in marking experience and education, which is done upon the candidate's sworn statement and the answers received to letters of inquiry sent by the Commission to former employers and others acquainted with the competitor. As the charges for specific errors are fixed by the rules for marking, it will be seen that absolute impartiality, accuracy and uniformity are secured in the work.

Appeals from the markings are sometimes made by competitors, but the prospect of securing a higher average by such action is small. Errors on the part of examiners in making charges are seldom found.

The papers of all the competitors in an examination must be marked at the same time, and no competitor's papers will be made special or be marked in advance of others.

RULES FOR MARKING EXAMINATION PAPERS

In subjects for which specific rules of marking are not prescribed, the examiner will usually prepare a scheme of marking for each question, so as to be able to explain his marks in case they are questioned.

All examination papers shall be marked under the following rules:

Mark every correct answer 100

Mark every faulty answer according to its value on a scale of 100, or as specifically directed below, deduct the sum of the error marks of such answer from 100.

When the question requires in the answer a specified number of states, countries, persons, places, locations, or things, the quotient arising from the division of 100 by the number of states, countries, etc., required shall be the credit to be given for each state, country, etc., correctly named. If a greater number is given in the answer than is required, the additional number of states, countries, etc., shall be added to the number required by the question, and the quotient arising from the division of 100 by the number thus obtained shall be the credit to be given for each state, country, etc., correctly named.

RULES FOR MARKING SPELLING

	From 100 deduct —
1 For each error in spelling when the exercise consists of 50 words....	2
2 For each error in capitalization (total charge not to exceed 10)...	1
3 For each failure to use the hyphen when required in a compound word	1
4 For each wrong use of the hyphen.....	1
5 For dividing a word, properly written solid, into two or more parts, each part being a distinct word, or for writing a simple word as a compound word	1
6 For each improper use of the apostrophe.....	1

RULES FOR MARKING COPYING FROM PLAIN COPY

1 For each error in orthography.....	5
2 For each word or figure omitted, repeated, or improperly inserted: *Provided*, That a deduction of 10 shall be made for two or more consecutive words, if the words do not constitute more than one printed line of the copy; that a deduction of 15 shall be made for more than one line, but not to exceed one and one-half printed lines; that a deduction of 20 shall be made for two printed lines or more than one and one-half lines; and that a proportionate deduction shall be made for a greater number of printed lines: *Provided further*, That if the copying exercise shall consist of less than five printed lines the charge for the omission of one or more printed lines shall be double.....	6

	From 100 deduct —
3 For each word inserted or added	5
4 For each word or figure substituted	5
5 For each transposition	5
6 For each abbreviation not in the copy	5
7 For each failure to capitalize according to copy	5
8 For each failure to punctuate according to copy	5
9 For each failure to paragraph according to copy	5
10 For irregularity in left-hand margin	5
11 For misdivision of a word at the end of a line	1
12 For each omission or improper use of the hyphen in dividing a word at the end of a line	1
13 For failure to indent as in copy (only one charge to be made in the exercise)	5
14 For each variation from the printed copy in the use of parentheses, brackets, or the hyphen	5
15 For each word altered, interlined, or canceled, for each blot, and for each minor erasure, if not neat: *Provided*, That not more than 5 shall be charged for one interlineation or cancellation or for blots	1
16 For failure to indicate, or for improperly indicating, italics, small caps, etc.	5
17 For using stenographic period (thus, ×), only one charge to be made in the exercise	5
18 For signing name	5
19 For misplacement, want of neatness, etc	3 to 5

RULES FOR MARKING COPYING FROM ROUGH DRAFT

1 For each error in orthography, provided that no charge shall be made for the repeated misspelling of the same word or stem in the same manner	3
2 For each error in syntax, provided that no additional charge shall be made for changes necessarily resulting from a given method of correction or attempted correction	3
3 For each change in tense, number, etc., which does not result in an error of syntax or essential change in the meaning	1
4 For each word omitted, inserted, or substituted involving a test or essential change of meaning (not more than 10 to be charged for the first ten words of each omission, and one for each word thereafter, and not more than 10 for the omission of each indicated insertion)	3
5 For each word omitted, inserted, or substituted involving no test or essential change of meaning, and for each word repeated	1
6 For each error in capitalization, punctuation, indention, paragraphing, or in division of words	1
7 For each error in transposition of inclosures	5

	From 100 deduct —
8 For each error in transposition of words or groups of words, provided that for a transposition of two words which improves the sentence and involves no test no charge shall be made	3
9 For each abbreviation	1 to 2
10 For each failure to use hyphen when required, or for each wrong use of the hyphen	1
11 For irregularity in left-hand margin	1 to 3
12 For each word interlined or canceled (charge not to exceed 5 for any one interlineation or cancellation), for each blot, and each alteration if not neat	1
13 For stenographic periods (as ×), only one charge to be made	1
14 For signing candidate's name	5

RULES FOR MARKING WRITING FROM DICTATION

1 For each word omitted, misspelled or misplaced (transposition of two words to count as one error)	2
2 For each gross error in punctuation or capitalization	1

RULES FOR MARKING PENMANSHIP

Mark penmanship according to its value on a scale of 100.

In determining the mark on penmanship, legibility, rapidity, neatness, and general appearance, as well as correctness and uniformity in the formation of words, letters, and punctuation marks, will be considered, and the examiners will be guided generally by the following scheme: Perfect, 100; very excellent, 99 to 95; excellent, 95 to 90; very good, 90 to 85; good, 85 to 80; ordinary, 80 to 70; poor, 70 to 65; very poor, 65 to 50. Below the grade of "very poor," 50 to 0.

RULES FOR MARKING LETTER WRITING

In marking the letter, its errors in form and address, in spelling, capitalization, punctuation, syntax and style, and its adherence to and treatment of the subject given will be considered, and its value in the judgment of the examiners marked on a scale of 100.

In determining the mark for letter writing, the examiner will be guided generally by the following scheme: Excellent, 100 to 90; good, 90 to 80; fair, 80 to 70; ordinary, 70 to 60; poor, 60 to 50; very poor, 50 to 25; practically worthless, 25 to 0.

RULES FOR MARKING ARITHMETIC

The examiner will prepare a scheme for marking each problem, giving proportional weights to the various steps or processes on the scale of 100. Charges for errors in computation in any step or process will not exceed the weight given such step or process.

No credit will be given for a wrong process.

For errors in work or operation, the following charges will be made:

	From 100 deduct—
1 For error in pointing off decimals in multiplication or division..	25
2 For error in omitting decimal point or in pointing off decimals in addition or subtraction	10
3 For each evasion of a decimal or common fraction test in the solution of a problem	25
4 For each error in computation, provided that in solutions where the possible maximum number of chargeable errors in computation is less than 10, a proportionate charge shall be made for each error	10
5 For error in copying figures from printed question or from work, wrong result being obtained	10
6 For error in copying figures from printed question or from work, right result being obtained	5
7 For indicating wrong process, but performing correct process....	5
8 For each improper use of the symbol or designation % or ¢ in connection with a decimal expression	10
9 For each improper or incorrect designation of a partial or final result	5
10 For failure to indicate the answer in problems by the letters "Ans.," or otherwise, when the answer is obscured by improper arrangement	5
11 For each failure to use the sign $ or £, or any other monetary or commercial sign, or any sign by which the relations of quantities are expressed, when the use of such is required in the statement or solution of a problem	5
12 For each error in denominate numbers in quantity of one denomination contained in a unit of a higher denomination.....	15
13 For fractions in answers not reduced to lowest terms.....	5 to 10
14 For an approximate result not sufficiently exact.....	5 to 10
15 If, when work or operation in full is required, the correct answer is given, but no work is shown	25
16 If, when work or operation in full is required, the process is indicated, but no work or only part of the work is shown	5 to 25
17 For superfluous or irrelevant work not canceled.....	10
18 For giving proof instead of solution, according to gravity of error	10 to 75
19 For complex statement, process or method, right result being produced	10
20 If, when work or operation in full is required, an approximate answer is given, but no work is shown or indicated, charge 25 for omission of work and deduct from 75 a proportionate charge for number of figures incorrect.	

RULES FOR MARKING STENOGRAPHY EXAMINATION

The stenographic part of this examination consists of an exercise in dictation, containing about 500 words, to be written by the competitor in steno-

graphic characters, which he must then transcribe on the typewriter. Speed and accuracy will be considered in marking this subject, each being marked on a scale of 100; in determining the mark for each exercise, speed will be given a weight of 2 and accuracy a weight of 8. When the accuracy mark in an exercise is less than 50 per cent., no credit will be given for speed.

The transcript will be compared with the printed text from which the dictation was given, and charges will be made for errors under the following regulations:

	From 100 deduct —
1 For each word omitted, added or substituted	1
2 For each word misspelled	1
3 For the use of the plural instead of the singular, or the singular instead of the plural, when the grammatical correctness is not affected, ½; when the grammatical correctness is affected	1
4 For each gross error in capitalization or punctuation	½
5 For each transposition	1
6 For each error in division of words	½
7 For each word repeated	½
8 For each failure to use hyphen when required	½
9 For each abbreviation	½
10 For interlineations, erasures, and lack of neatness	1 to 5

Charges for errors in numerals will be determined by the number of words required to write the numerals.

Time consumed in transcribing the exercise will be marked according to the following scale: If the competitor consumes only twenty minutes in transcribing, he will be credited with 100. When the time consumed is more than twenty minutes and not more than thirty minutes, one-half of 1 will be deducted from 100 for every minute consumed more than twenty minutes. When the time consumed is more than thirty minutes, 1 will be deducted from 95 for every minute consumed more than thirty minutes.

RULES FOR MARKING TYPEWRITING

Speed and accuracy will be considered in marking this subject, each being marked on a scale of 100; in determining the mark, speed will be given a weight of 2 and accuracy a weight of 3. When the accuracy mark in an exercise is less than 40 per cent., no credit will be given for speed.

The tabulating exercise will be marked for accuracy under the following rules:

	From 100 deduct —
1 For omitting the general heading	10
2 For improper general heading	3 to 10
3 For each column heading omitted (total charges not to exceed 10)	5
4 For each inaccuracy in column headings (total charges not to exceed 10)	1 to 3
5 For each irregular margin to columns	3 to 10

	From 100 deduct —
6 For each column omitted or substituted	25
7 For each additional column inserted	10
8 For each abbreviation contrary to instructions (total charges not to exceed 35)	5
9 For each unnecessary run over to following line	5
10 For each word or item omitted, added or changed (for the omission of a whole line, 10), and for each transposition of items	5
11 For each error in the name of an individual, state or place, and for each error in other entries (only one charge to be made for the full name of an individual or for a single-column entry or for the repeated misspelling of the same word)	5
12 For each error in spelling in headings, and for other minor errors not specified	2 to 5
13 For want of neatness by reason of blots, erasures, etc	1 to 15
14 For each comma used in place of a decimal point, or vice versa (total charge not to exceed 10)	2
15 For each error of punctuation (total charges not to exceed 5)	1
16 For omission of punctuation, thus evading test in spacing	5 to 20
17 For omission of $ or other signs required by copy	5 to 10
18 For improper repetition of $ or other signs required by copy	5 to 10
19 For each error not specified above	5 to 10
20 For drawing lines, with hyphen, period, or other character, between lines in table	10

Time consumed will be marked according to the following scale: If the competitor consumes only twenty minutes in tabulating, he will be credited with 100. When the time consumed is more than twenty minutes and not more than thirty minutes, one-half of 1 will be deducted from 100 for every minute consumed more than twenty minutes. When the time consumed is more than thirty minutes, 1 will be deducted from 95 for every minute consumed more than thirty minutes.

RULES FOR MARKING EXPERIENCE

In marking experience the following topics will be considered:

Age.— The examiner will determine standard limits of age most desirable for the position in question. Candidates within those limits will receive the maximum allowance for age, and other candidates will be rated according to their variation from the standard adopted.

Height and weight will be considered for positions requiring physical strength or perfection, charges being made for defect in height from the standard adopted and for any great variation in weight from the recognized standard weight for the height and age of candidate.

Education will be considered for positions reasonably requiring educational attainments above the common-school grade, and will be rated according to its value in the opinion of the examiner.

Experience.— The rating for experience will be based on kind of work done, nature and length of employment, salary or compensation, extent of supervision over others, and other facts called for in application and experience blanks.

Letters of recommendation and certificates of character will be considered *only* when received in response to the inquiry or request of the Commission. Their effect on the rating of the candidate will depend on their contents and the extent to which they corroborate the candidate's own statements.

Every fact called for in the experience statement is important to the examiner, and candidates cannot be too careful to state in detail all important facts of their history.

Failure to satisfy any preliminary requirement of age, height, weight, education, or experience established for the examination in question will disqualify the candidate, and candidates who just satisfy the preliminary requirements will usually be given a minimum standing of 75 per cent.

HASTE AND CARELESSNESS IN EXAMINATIONS

Many competitors either fail in an examination or fail to obtain a satisfactory grade, not through a lack of knowledge, but principally owing to *haste* and *carelessness* in reading and interpreting questions and in writing the answers. Especially is this true as to technical and professional examinations in which time is not an element in determining the ratings. While a competitor must finish his examination within the prescribed limit of time, he should carefully, thoughtfully and fully answer each question, if possible.

The time allowed for each examination has been found to be sufficient for competitors to complete it by using a reasonable degree of intelligent application in their work, and it can not be extended in individual cases, as, for instance, where a competitor devotes so much time to the work of one paper that he can not complete the remaining papers within the prescribed time. If an applicant finds that for any reason he can not devote to the examination the full time allowed for such examination, and would be unable to complete it within the time at his disposal, he should not attempt it, as no credit can be given for subjects or questions omitted, even though the work done in the other subjects would indicate that he could have passed the omitted subjects with credit if he had had the time. Correspondence from competitors with reference to such matters will, therefore, necessarily be fruitless.

NOTICE OF STANDING TO COMPETITORS

In order to be eligible for appointment competitors must attain a standing of 60 or over in each subject of the examination and an average standing of 75 or over on the entire examination.

A notice of standing will be sent to each person examined, whether such person passes or fails to pass. This notice will be sent as soon as practicable after the papers are marked. Letters inquiring how soon the papers will be marked only serve to delay the work.

If the papers of a competitor who makes an eligible average are not complete in every particular the name of such competitor will not be entered upon

the eligible register nor notice of standing sent until the papers are completed.

In alleged cases of collusion the names of the persons suspected will not be entered upon the eligible register, should they make an eligible average, nor notices of standing be sent, unless, after thorough investigation, the charge of collusion is not sustained.

WHEN RE-EXAMINATIONS ARE ALLOWED

Persons who are examined, whether they pass or fail, are not eligible to re-examination for the same position, or any position covered by the same examination, until nine months after the date of the former examination. Unless the needs of the service require otherwise, re-examination within nine months will be granted only in cases in which injustice has been suffered by act of the Commission or one of its agents, or where an applicant has been unable to do himself justice on account of illness which occurred after the commencement of and during the progress of the examination, and in such cases the request for re-examination must be accompanied by a statement of the alleged facts upon which such request is based. Applicants who are recovering from recent illness must abide by the result of their examination.

VETERAN PREFERENCE

The only persons entitled to preference *in appointment* as veterans are "honorably discharged soldiers, sailors and marines from the army and navy of the United States in the *late civil war* who are citizens and residents of this state." Veterans of the Spanish war and veteran volunteer firemen have the same right to a hearing before removal as do veterans of the civil war, but they have *no preference in appointment.*

The preference granted to *civil war veterans* does not give them any advantage in their examinations or in the rating of their papers. They must take the same examinations and attain the same standing as other persons in order to be eligible for appointment. When their names are placed on the eligible list they are entitled to be certified and appointed before other persons, though such other persons may have been rated higher in their examinations. See sections 20 and 21 of the Civil Service Law, chapter 370 of the Laws of 1899.

PROSPECT OF APPOINTMENT

Except as indicated in this paragraph, it is not possible to estimate the prospects of an eligible for appointment, and attempts to predict when names might be reached for certification would be certain to result in disappointment. The law requires examinations to be held, but the passing of an examination does not insure either certification or appointment. The conditions of appointment in the various branches of the service are such that nothing can help and nothing can hinder the certification of a name in the order of its standing on a register. As the highest possible mark is 100 and the lowest that gives eligibility is 75, it follows that the nearer a mark is to 100 the more likely it is that the person may be reached for certification within the period of eligibility. There are usually on the registers more eligibles having ordinary qualifications than are required for appointment.

For the information of applicants the Commission mentions the following positions as those for which it has been unable to secure sufficient qualified eligibles: Apothecary; guard, Elmira Reformatory; physician, third grade, trained nurse; woman officer, state charitable institutions; male clerk, Regents' office; stenographer, first and second grades, in state hospitals and institutions. Persons willing to accept such positions have excellent chance of appointment if successful in passing the examination.

Entrance to the service is usually in the lowest grades, the higher grades being filled generally by promotion. The prospect of promotion varies so much in the different departments that no specific information on the subject can be given.

PREPARATION FOR EXAMINATION

Candidates will find in the manual and in the circular issued prior to each examination, all the information that can be given concerning the scope and subject-matter of examinations. Special and technical examinations should be entered only by those who have the proper training and experience to fit them for the work to be done. The Commission cannot recommend schools of instruction or text-books for preparation for examination. Special instruction will be useful in elementary subjects, but most special examinations presuppose some experience and training in work similar to that of the position to be filled. The reports and other publications of public departments furnish much information regarding the work of the public service.

MEDICAL AND PHYSICAL EXAMINATION

Besides the medical certificate in the application a medical and physical examination by the Commission's examiners is required in case of candidates for prison, jail and reformatory keeper or guard. The physical examination consists of the following tests: (a) Hauling the weight by the arms to the height of the chin. (b) Pushing weight from parallel bars. A total of 14 "hauls" and "pushes" is required for a perfect mark. (c) Dumb-bell exercise — lifting from the floor with each arm a heavy dumb-bell and raising it from the shoulder to the full height of the arm. The total lift for both arms to be 100 pounds for a perfect mark. (d) Abdominal muscles — tested by rising from a supine position to a sitting position with a dumb-bell held at the back of the neck. Weight required for perfect mark 25 pounds. (e) Agility — tested by a running high jump. Height required for a perfect mark 4 feet 8 inches.

DESCRIPTION OF COMPETITIVE EXAMINATIONS

The following pages contain descriptions and sample questions of the competitive examinations held by the Commission. The various examinations are arranged in five groups as follows:

I Examinations for clerical positions for which eligible lists are constantly maintained.

II Examinations for other positions of a general character for which lists are maintained.

III Examinations for special and technical positions for which eligible lists are maintained.

IV Examinations for special and technical positions in which vacancies are infrequent and examinations are held only when vacancies occur.

The different subjects in each examination are given relative weights according to their importance. These weights represent the value of each subject in the whole examination. The method of obtaining the general average of a competitor is as follows: Multiply the mark obtained in each subject by the relative weight of that subject, add the products and divide the sum of the products by the sum of the relative weights. The quotient thus obtained will be the general average of the competitor for that examination. No average standing will be computed unless the competitor obtains at least 60 per cent. in each separate subject of the examination.

I Clerical Examinations.

Clerk. The minimum age, twenty-one years. Open to both sexes. Salaries usually from $600 to $1,200. Time allowed, six hours.

	Subjects of examination	Relative weights
1	Spelling	3
2	Letter writing	5
3	Copying from plain copy	2
4	Penmanship	3
5	Copying from rough draft	2
6	Arithmetic	5
	Total	20

Specimen questions

1 *Spelling.*— Fifty words of average difficulty in common use. The examiner will first pronounce the word, then define it or exemplify it in a sentence, then pronounce it again, after which the competitor is required to write the word

on the spelling blank. The competitor should not write the definition, nor should he begin words with capitals unless they are proper names.

abolish	durable	effigy	medicate	illegible
balloon	callous	citation	variance	criticise
heinous	fascinating	specimen	rarity	elementary
piracy	secession	erroneous	forfeit	delineate
caucus	apparel	revenue	economy	veteran
tenure	annuity	judgment	homage	vacillating
civilian	circuit	evasion	nicety	novelist
stupefy	warrant	serviceable	efficient	emigrate
libelous	delegate	hideous	almanac	baptism
discrepancy	coercion	emotion	changing	deprecate

2 *Letter writing.*— Directions: Write a letter containing not less than 100 words to the New York Civil Service Commission making application for the position for which you are being examined, stating your education, experience and qualifications therefor. Sign your examination number, not your name. You are at liberty to make preliminary drafts on other paper before putting the final work on this sheet. In marking the letter, errors in form and address, paragraphing, spelling, punctuation, capitals, syntax and style will be considered.

3 *Plain copy.*— Note: In marking this exercise a charge will be made for every variation from the printed copy in words, spelling, punctuation, capitals, paragraphing, etc. Penmanship, when a required subject in an examination, will be marked from this exercise. Directions: Copy precisely the following:

Competitive examinations will be held from time to time for such positions as shall be specially requested by appointing officers and for those for which, in the opinion of the Commission, the number of applicants or lack of eligibles renders an examination desirable. The preliminary requirements, subjects of examinations and relative weights for positions in the competitive class shall be published from time to time. The place and date of an examination for any position, when determined, and any other material information in regard thereto, will be posted in the office of the Commission in the Capitol at Albany at least ten days before the date of such examination. (Extract from Regulation V.)

4 *Penmanship.*— Marked from exercise in plain copy.

5 *Copying from rough draft.*— N. B.: Spelling, use of capitals, punctuation and all omissions and mistakes will be taken into consideration in marking this subject. Directions to the competitor.— Make on the accompanying blank sheet a smooth copy of the manuscript letter given below, correcting all errors in spelling and syntax, and punctuating and capitalizing properly. Write in full all abbreviated words, except standard abbreviations in the address. No changes are permitted, except those necessary to correct errors in syntax, spelling, punctuation and capitalization, and to write in full abbreviated words. Do not sign your name.

P O dept. Washington
D C Jany 16 1893

Hon^ble Jno Smith
D Missouri Sir, In answer to your
inquiry of the 30 I have the honor to state
that we do not grant leave of absence where they
are injured in Railway accidents when
on duty which incapacitates them for
service permanently or temporarily These
leaves cover a period of one year unless they recover
before the expiration of that time but if the
disability extends beyond that period
the dept is obliged to retire the clerks
from the Service This regulation is not a
good one in merits but it does not reach
the emergency fully and fairly It is
respectfully recomended that provision
for the special employment of clerks of
1st grade,

Very Respectfully.
John Wanamaker
P M Genl

6 Railway postal clerks who receive injuries

who has been permanently disabled in R[illegible] accidents

and return to duty

Compelled under existing laws

6 *Arithmetic.*— N. B.: In solving problems the entire process must be given. 1 Add the following so as to give the totals of each town for three years and of all the towns for each year and the grand total of all the towns for the whole period, placing the several amounts in the proper spaces in the form. Do not rewrite the numbers.

STATE TAX FOR SCHOOLS IN THE COUNTY OF CHEMUNG, FOR THREE YEARS.

TOWNS.	1881.	1882.	1883.	Totals.
Ashland	437.44	451.62	473.82	
Baldwin	220.92	216.80	232.53	
Big Flats	842.44	883.48	918.30	
Catlin	288.90	310.43	332.55	
Chemung	915.23	975.86	1011.04	
Elmira Town	707.07	705.54	735.96	
Elmira City	8480.35	8867.92	9094.24	
Erin	300.60	316.09	329.45	
Horse Heads	1168.30	1238.59	1308.32	
Southport	1078.01	1123.71	1175.62	
Van Etten	306.06	318.21	355.08	
Veteran	700.11	733.86	778.92	
Totals				

2 When a train is moving at the rate of 52 miles an hour, how long will it take in passing 35 telegraph poles, the distance from one pole to the next being 66 yards? 3 Find the cost of a piece of oil cloth 24½ feet by 19¼ feet at 57 cents a square yard. 4 If a merchant sells ¾ of an article for ⅞ of its cost, what is his gain per cent? 5 The assessed valuation of a village is $9,763,254. What rate of tax on $1,000 must be levied in this village to pay for a system of sewers which cost $17,500? 6 What would be the cost of a lot 120 feet by 36 feet at $1500 per acre? What capital invested in 5% stock at 96¼ will yield a yearly income of $1,763 55? 8 A dealer pays $570 for a piano after deducting trade discounts of 40%, 20% and 5% from the list price. Find the list price.

Bookkeeper. Minimum age, twenty-one years. Open to both sexes. Salaries usually from $600 to $1,200. Time allowed, eight hours.

Subjects of examination	Relative weights
1 Spelling	1
2 Copying from plain copy	1
3 Penmanship	1
4 Test in rapid addition	1
5 Theory and practice of bookkeeping and commercial arithmetic	4
6 Experience	2
Total	10

Specimen questions

1, 2 *Spelling and copying from plain copy.*— Similar to those for clerk, pages 19, 20

3 *Penmanship.*— Marked from exercise in plain copy.

4 *Test in addition.*— To the examiners: Before distributing these envelopes instruct the class not to open them until directed to do so. Call special attention to the printed instructions on the envelopes, and give the class time to read the same carefully before giving signal to open them. See that each applicant stops adding and turns over the paper promptly at the expiration of seven minutes from the time the signal to open the envelopes was given. The papers should then be collected. As this exercise is intended to be a test of the candidate's ability to add rapidly, it is important that these instructions be strictly carried out.

To the candidates: This envelope contains an exercise in addition. It is not to be opened until the signal to do so is given by one of the examiners. The exercise consists of columns of figures. Add as rapidly as you can, commencing at the right. You will be allowed precisely seven minutes after the signal to open the envelopes has been given. At the signal to stop you must turn the paper over at once.

58,119	409,042 40	45,162	99,969 77	81,456 84	47,383	176,592
62,816	58,026 30	21,680	15,569 01	12,684 86	23,253	212,849
41,230	52,977 83	88,348	18,675 54	15,217 11	91,330	768,318
183,714	37,620 62	127,419	18,494 01	15,012 15	33,255	861,786
49,381	68,529 11	897,586	84,105 90	27,789 99	47,383	950,335
86,248	68,609 83	680,554	29,083 83	23,657 19	52,895	182,169
193,475	64,047 11	886,792	19,810 78	16,162 11	419,380	185,186
59,246	40,367 10	123,859	20,833 50	17,016 27	73,595	485,956
209 618	42,174 60	112,371	11,405 76	9,292 59	101,104	566,120
165,234	95,773 42	31,831	36,679 88	29,887 30	73,596	125,628
216,301	39,083 47	73,396	12,167 07	9,913 90	909,494	679,344
58 563	17,713 00	21,360	15,459 69	12,596 78	77,892	572,732

5 *Bookkeeping and commercial arithmetic.*— 1 What, in your opinion, are the most important books used in double entry bookkeeping? State briefly the use of each one named. In case of litigation, which book or books must be submitted to establish the facts of a transaction? 2 Explain the responsibility taken by a person when he indorses a check or note. What form of indorsement should be used in transferring a draft to be sent by mail? 3 What is the purpose of taking a trial balance? Name three common errors which will throw books out of balance. If a trial balance does not balance, what steps would you take to locate the error? 4 In closing a ledger in double entry bookkeeping, what accounts are required to be closed? How is an account that shows loss or gain closed, if it has no inventory? How, if it has a resource inventory? How, if it has a liability inventory? 5 A note of $1,050, dated Jan. 4, 1902, to run two months, is discounted at a bank on Jan. 23, 1902, at 6% per annum. Find the proceeds. 6 A lot of woolen cloth, weighing 1,200 pounds, is invoiced in Liverpool as 1,575 yards, at 9 s. 6 d. per yard. Find the amount of duty to be paid at New York at 50 c. per pound

and 25% ad valorem. 7 My broker buys for me 200 shares C., B. & Q. stock at 135¾, brokerage ⅛%, and I deposit a margin of $3,000. After 30 days, I instruct him to sell at 135. Allowing interest at 6%, and ⅛% for selling, how much of the $3,000 should he return to me? 8 A and B are partners. On Jan. 1, 1901, A invested $6,000 and B $7,500. A has withdrawn $1,050 during the year, and B, $1,850. According to the agreement, A should be credited at the end of the year with $1,200 for services, and B with $1,500. The remainder of the net gain, or the net loss, should be divided equally. On Jan. 1, 1902, there are the following resources and liabilities: Merchandise on hand worth $10,590.75, cash in bank $1,140.19, open book accounts due the firm, considered good (not including the partners' accounts) $7,900.45, accounts payable $4,901.66, and office furniture worth $1,250. Find the present worth of each partner on Jan. 1, 1902. 9–13 Using paper to represent a journal, a sales book, and a cash book, make entries for the following transactions in doubly entry form: Jan. 3, 1902. Bought of G. W. Gould & Co., Boston, an invoice of goods amounting to $1,600.45 at 60 days; 5%, 10 days. Jan. 4. Sold H. R. Holding, of Dayton, Ohio, merchandise worth $925.10. Received cash $500, and drew on him at sight for the balance. Left the draft at the bank for collection. Jan. 6. Accepted G. W. Gould & Co.'s draft at 10 days, for invoice received Jan. 3, less 5%. Jan. 8. Sold J. C. Adding a bill of goods amounting to $410.25 at 30 days; 2%, 5 days. Jan. 11. Received of J. C. Adding his note at 30 days with interest for invoice of Jan. 8, less 2%. Jan. 13. Discounted at the bank the note of J. C. Adding, and received credit for its face. Also discounted my note for $1,000, indorsed by Burke & Haner, receiving credit for its face, less discount at 6% for 30 days. My acceptance, dated Jan. 3, favor of G. W. Gould & Co., and due to-day, is paid by check. 14–16 Following is given the condition of each account in John W. Doe's ledger, also the inventories taken Jan. 1, 1902. Make a trial balance, a statement of the losses and gains for the year, and a statement of the resources and liabilities on Jan. 1, 1902:

Investment account, Cr.	$30,910 67
John W. Doe (private account), Dr.	2,040 00
Merchandise (inventory Jan. 1, 1901)	22,201 29
Purchases (Jan. 1, 1901 to Jan. 1, 1902)	27,499 26
Sales (Jan. 1, 1901 to Jan. 1, 1902)	31,400 60
Notes receivable	297 40
Accounts receivable (considered good)	6,710 30
Accounts receivable (considered worthless)	320 00
Accounts payable	8,646 45
Bills payable	2,400 75
Real estate (cost)	7,500 00
Fixtures (cost)	1,210 00
Traveling expenses	662 50
Salaries of employes	1,920 00
Advertising	525 73
General expenses	1,524 27

Cash on hand	$947 72
Inventory taken Jan. 1, 1902.	
Mdse. on hand	26,660 27
Real estate valued at	7,500 00
Fixtures	1,075 00
Due J. M. Hart (bill for blank books and stationery)	67 30

6 *Experience and education.*— See page 15.

Junior clerk. Open to both sexes. Candidates must be between sixteen and twenty-one years of age at the time of examination and also at the time of appointment. They will be eligible to clerical positions at salaries not exceeding $480 for the first year, nor $600 for the second and succeeding years. Promotion from the position of junior clerk to that of clerk will be allowed under the rules governing promotion when the appointee shall have served two years as junior clerk *and* have attained the age of twenty-one years. Eligibles becoming twenty-one years of age during the period of eligibility will be transferred to the clerk list with the same rating. Time allowed, six hours.

	Subjects of examination	Relative weights
1	Spelling	4
2	Arithmetic	6
3	Copying from plain copy	3
4	Penmanship	4
5	Copying from rough draft	3
	Total	20

Specimen questions

1 *Spelling.*— Similar to that for clerk, page 19.

2 *Arithmetic.*— N. B.: In solving problems the entire process and computation must be shown. 1 A firm had ¼ of its capital invested in goods, ⅓ of the remainder in land, and the balance, $1,224, in cash. What was the capital of the firm? 2 A broker bought goods at ¾% commission; paid $750 for expenses, and sent a bill for $23,343.75; what was the amount of the purchase? 3 Find the amount of $304.08 for 2 years, 4 months, 24 days at 5%. 4 A house is valued at $10,000. What will it cost to have it insured for ⅘ of its value at 1¼% premium? 5 The area of a rectangular field is 25 acres, 140 square rods and one side is 47½ rods long. What is the length of the other side? 6 What amount must be invested in 4½% bonds at 106¼% in order to produce an annual income of $1,470.33? 7 A tank is 6 meters long, 4.5 meters wide and 9.5 decimeters high. How many liters of water will it contain? 8 What will it cost to construct a railroad 8 miles, 65 rods, 4 yards long, at $15,600 a mile? 9 The proceeds of a note for 3 months when discounted at a bank at 6% were $738.75. What was its face?

3 *Copying from plain copy.*— Similar to that for clerk, page 20.

4 *Penmanship.*— Marked from exercise in plain copy.

5 *Copying from rough draft.*— Similar to that for clerk, pages 20, 21.

Clerk, Regents' office. Minimum age, sixteen years. Open to both sexes. Applicants must be graduates of a high school or have an equivalent education according to the standard of the Regents. Salary at appointment usually $30 per month. Time allowed, six hours.

	Subjects of examination	Relative weights
1	Spelling	3
2	Letter writing	5
3	Copying from plain copy	2
4	Penmanship	4
5	Arithmetic and algebra	5
6	Constitutions and government of New York and the United States,	3
7	English	3
	Total	25

Specimen questions

1–3 *Spelling, letter writing, copying from plain copy.*— Similar to those for clerk, pages 20, 21.

4 *Penmanship.*— Marked from the exercise in plain copy.

5 *Arithmetic and algebra.*— 1 It costs $400 to build a fence around a farm 40 rods square. How much more will it cost to build the same kind of fence around a farm of equal area in the form of a rectangle four times as long as it is wide? 2 What must be the face of a note at 60 days, the proceeds of which when discounted at a bank at 6% are $2,514.60? 3 On Jan. 6, 1898, Wells Fargo Express stock was quoted at 116 at the opening of the stock exchange and 110 at the closing. How much would a man lose on 17 shares, bought at opening and sold at closing, brokerage ⅛% in each transaction? 4 A tank is 3 meters long, 24 decimeters wide and 38 centimeters deep. How many liters of water will it contain? 5 (a) State an axiom which justifies the transposition of a term from one member of an equation to the other. (b) Show that $a^{-1} = \frac{1}{a}$. 6 Solve the equation $\left(x+\frac{1}{x}\right)^2+4\left(x+\frac{1}{x}\right)=12$. 7 There were two trains, one 140 feet and the other 160 feet long. When going on parallel tracks in the same direction one passed the other in 15 seconds. When going in opposite directions they passed in 3¾ seconds. Find the rate of speed of each train. 8 Express the following in their simplest form: (a) $\frac{8x^2+2x-3}{6x^3+5x^2-2}$; (b) $(-a^2x^{\frac{1}{2}})^6$.

6 *Civil government.*— 1 State briefly the work of each of the educational departments of the state government. 2 What county officers are elected by the people? 3 Describe the process by which a bill introduced in the state legislature becomes a law. 4 Describe the supreme court of the United States with reference to (a) number of judges, (b) tenure of office, (c) jurisdiction. 5 What are the principal duties of the state comptroller? 6 What are the provisions for filling the office of president of the United States when made vacant by resignation, death or disability? 7 What officers are elected

by joint ballot of the state legislature? 8 Classify the following as state officers, federal officers or county officers: member of congress, surrogate, adjutant-general, postmaster, commissioner of education, superintendent of insurance, sheriff, consul, district attorney, member of assembly.

7 *English.*— The first three questions refer to the following quotation.

I am *alone;* my bugle strain
May call some straggler of the train;
Or, fall the *worst* that may betide,
Ere *now* this falchion has been tried.— Scott.

1 Give the mode, tense and voice of each verb. 2 Name the part of speech, and give the syntax of each word italicized. 3 Write the full meaning of the quotation in your own words, avoid all poetic forms and expressions. 4 Write sentences in which the following words are discriminately used: recipe, receipt; practicable, practical; purpose (verb), propose; bravery, courage; credible, credulous. 5 Select from the following the incorrect sentences and rewrite in correct form, giving the reason for each correction: (a) Every hour and every moment were precious. (b) It is remarkable how close the history of the apple tree is connected with that of man. (c) You all remember the foxes remark about the grapes. (d) Could it have been we that he meant? (e) Idiom is a peculiarity of a language which is not found in other languages. (f) Washington and Hamilton were at this time driving the ship of state. 6 Mention the figure of speech in each of the following sentences and rewrite each sentence, expressing the thought without using figurative language: (a) Commit a crime, and the earth is made of glass. (b) During that frosty night the daffodils perished like criminals in their condemned caps without their petals ever seeing daylight. (c) He was always being cured without improving his health. (d) Storms shall sob themselves to sleep. (e) He had his eye all but exclusively directed on terrestrial matters. (If you cannot give the technical name of the figure, describe it and comment on its effectiveness.) 7 Mention prominent characteristics of the style of each of the following authors, and name or quote some production which exemplifies the points mentioned in each case: Addison, Milton, Hawthorne, Ruskin, Burke. 8 Write an essay of at least 150 words on one of the following topics: "The books I like best;" "The life of Longfellow."

Stenographer. Minimum age, eighteen years. Open to both sexes. Time allowed, six hours. Candidates must provide typewriting machines and new note books for use in the examination. This examination is held in three grades, as indicated below. Candidates may compete for any or all grades on the same application.

First, second and third grades, for positions at salaries of not more than $600.

Subjects of examination	Relative weights
1 Spelling	2
2 Stenography, tested by dictation at the rate of 80 words per minute, to be transcribed on typewriter	10
3 Typewriting and tabulation	3

4	Letter writing	3
5	Penmanship	1
6	Arithmetic	1
	Total	20

Fourth and fifth grades, for positions at salaries from $600 to $900. Subjects and relative weights same as for first grade except that the dictation is at the rate of 100 words per minute.

Sixth grade, for positions at salaries of more than $900. Subjects and relative weights same as for first grade, except that the dictation is at the rate of 125 words per minute.

Specimen questions

1 *Spelling.*— Similar to that for clerk, page 19.

2 *Stenography.*— Sample passage for dictation.

At the end of the fiscal year, the books and accounts of this department were compared with the similar accounts kept by the state comptroller. The balances in the several accounts were found to agree, both as to the general appropriation account and the rebate account. The department's books were also checked with books of the comptroller's department, for the purpose of determining the amounts paid to the state treasurer by county treasurers and special deputy commissioners, on account of excise collections.

The general observance and enforcement of the law has been quite as good as expected and a material improvement on the preceding years. The indifference of public officials charged with its execution has largely disappeared. The higher courts have sustained the law and given strength to its provisions by favorable decisions in most of the cases brought before them for adjudication. The increased number of legal decisions upon questions arising under the liquor tax law has helped very much in settling matters heretofore uncertain and in dispute, and has been of great value to the department, as well as to those in the trade and the people generally.

There has been more discussion of the liquor tax law and more interest taken in its workings and results during the past twelve months than any year since its passage. This interest has not been confined to any particular class, but has been general.

There has been a marked increase in the demand for statistics relative to the law and its operation, and the limited edition of three thousand annual reports of this department, published by the last legislature, was almost wholly exhausted within sixty days from its publication.

An urgent increased demand for copies of the law and statistics relative to and bearing upon the liquor traffic under the present and previous laws, was created when one of the great political parties promised in its platform, if sustained by the people, to promptly repeal the act. This unexpected partisan attack upon the law aroused a great deal of interest throughout the state, and has caused much earnest inquiry and discussion as to its merits and demerits.

The discussion has been carried on by the press, from the platform and pulpit, as well as among the people generally, in every city, hamlet and town in the state, and from it has arisen an unexpected and phenomenal demand for copies of the law, official reports, figures, facts and general statistics bearing upon the excise question. This material the department has supplied as best it could.

The agitation and thorough discussion of the subject, so materially affecting the welfare and interest of the inhabitants of the state, was a thing much needed, and the comments and arguments thus provoked and carried on have done much good. They have familiarized the people with what has been done, and demonstrated what can and ought to be expected and accomplished under the law when fully understood and fairly administered and observed.

Formerly most citizens had taken very little pains to inform themselves, and consequently had but little knowledge of the law or the details of its operation.

3 *Typewriting and tabulation.*— With the typewriter, arrange the following statistics in a table of five columns, without abbreviations, using the following column headings: company, fire losses, commissions, officers' salaries, taxes. The preliminary statement given below may be used as a general heading.

Disbursements of New York state mutual fire insurance companies, for the year ending December 31, 1892.

The Dutchess County company paid $177,783.99 for losses by fire, $26,946.57 for commissions, $16,178.89 for salaries and $2,246 for taxes. Erie County paid but $887 for taxes, $5,431 for salaries, $5,691.62 for commissions, and fire losses to the amount of $7,738.66. The Glen Cove company paid out for commissions $1,748.39, for salaries $4,174.99, for taxes $88, and $9,675.55 for losses by fire. The Mutual of Albany expended only $956.81 to meet all losses by fire, and $156.71 for commissions, but paid $3,500 in salaries, and $1,005 for taxes. The New York mutual paid $334,294.97 for losses of property, commissions to the amount of $79,398.65, salaries $40,301.90 and $7,419 for taxes. Only $1,673.23 was paid for fire losses by Richmond County, $101.03 for commissions, $1,805.83 for salaries, and $12 for taxes. Suffolk County sustained losses amounting to $9,613.82, though they paid only thirty-two dollars for taxes, $963.97 for commissions and $1,622.92 for salaries.

4 *Letter writing.*— Directions: Write a letter on the typewriter to the State Civil Service Commission making application for the position for which you are being examined, stating your education, experience and other qualifications therefor. Sign your examination number, not your name. The letter should be in proper form and should contain at least 150 words, and in marking it, errors in form and address, spelling, punctuation, capitals, syntax and style will be considered. You are at liberty to make preliminary drafts on other paper before putting the final work on this sheet.

5 *Penmanship.*—An exercise in copying from plain copy will be given, which will be marked only for penmanship.

6 *Arithmetic.*— N. B.: In solving problems the entire process and computation must be given. 1 Write in figures, as one number, fifteen million two thousand fifty-five. 2 Write, in the Roman notation, 65, 90, 145, 508. 3 Add together one-third, one-fourth and one-seventh. 4 Multiply 9875 by 307 and divide by 79. 5 Which is greater (and how much) one-seventh or three-

elevenths? 6 Find the cost of the following: 348 eggs at 14 cents per dozen; 643 lbs. of sugar at 6½ cents per lb. and 7750 lbs. of coal at $5.87 per ton. 7 Find the interest on $725 for one year and ten months at seven per cent. 8 An agent receives $1,092.42 with which to buy oats at 42 cents per bushel, after deducting his commission of 2 per cent. on sum expended; how many bushels can he buy?

II Examinations for positions of a general character for which lists are maintained.

Deputy factory inspector. Minimum age, twenty-one years. Open to both sexes. Salary, $1,200. In marking the experience of competitors for this position, due weight will be given to experience in mechanical trades, as superintendent, foreman or operative in factories, or any other positions of such nature as to interest the occupant in the requirements and enforcement of the labor law. Time allowed, six hours.

	Subjects of examination	Relative weights
1	Arithmetic	1
2	Laws relating to the department of labor	3
3	Factory inspection, including preparation of letters and reports	4
4	Experience	2
	Total	10

Specimen questions

1 *Arithmetic.*— 1 Add the following:

781,947.19
40,255.81
59,748.60
57,137.50
129,640.05
91,187.77
58,076.59
175,263.26
66,553.63
60,739.55
45,573.01
825,963.21

2 A room in a factory is 65.5 feet long, 36 feet wide and 12½ feet high. How many cubic feet in the room? 3 Fresh air enters a room through an opening 8 in. × 14 in. with a velocity of 5 ft. per second. At this rate, how many cubic feet of air would enter the room in an hour? 4 A company employs 17 laborers at $1.50 per day; 28 mechanics at $3.60 per day; 9 teamsters at $2.25 per day; 2 bookkeepers at $15 per week and a superintendent at $1,560 per year. What is the weekly payroll of the company? 5 It required 24 days to lay a sewer. 1/3 of the time was used in digging; 1/6 in laying; 1/12 in filling, and the remainder in repaving. How many days were given to repaving?

2 *Factory law.*— 1 Define the following terms as used in the labor law. factory, employer, employee, minor, day's work. 2 State the law regarding the payment of wages by employers. 3 When females are employed in factories what provisions must be made for their benefit? 4 What portion of the

domestic relation law is it the duty of the factory inspector to enforce? 5 What must a certificate for employment issued to a minor contain? 6 What is the law regarding the inclosure and operation of elevators and hoisting shafts? 7 State the law regarding fire-escapes. 8 What are the duties of the factory inspector in relation to (a) inspection of bakeries? (b) inspection of mines?

3 *Factory inspection.*— 1 Write a report addressed to the factory inspector of a violation of the law regarding the employment of minors. 2 How many persons would you allow to be employed during the day-time in a room 50 feet long, 25 feet wide and 15 feet high? 3 Draw an affidavit charging John Doe with the unlawful use of his dwelling-house for manufacturing purposes. 4 Draw an order to be served upon Richard Roe requiring him to properly ventilate a workroom. 5 Describe briefly your method of inspecting a paper box factory three or more stories in height. 6 Suppose a report of an accident in a factory was referred to you for investigation, what would you do? 7 What would you do should you discover a case of scarlet fever in a factory while making an inspection? 8 Would you consider it your duty, as a deputy factory inspector, to enforce an ordinance of a city requiring certain factories to keep pails filled with water in each workroom for use in case of fire?

4 *Experience.*— See page 15.

Inspector, state board of charities. Minimum age, twenty-one years. Salary for men, $1,200, for women, $900. Time allowed, six hours.

	Subjects of examination	Relative weights
1	Arithmetic	1
2	Copying from plain copy	1
3	Penmanship	1
4	Letter writing and preparation of reports	2
5	Laws relating to the state board of charities; aims and methods of inspection	3
6	Experience	2
	Total	10

Specimen questions

1, 2 *Arithmetic, copying from plain copy.*— Similar to those for clerk, pages 20, 22.

3 *Penmanship.*— Marked from exercise in plain copy.

4 *Letter writing and preparation of reports.*—This exercise is intended to enable the Commission to judge your ability to write a report and your knowledge of its proper form (arrangement of the several parts), margins, paragraphs, spelling, punctuation, use of capitals, grammatic construction, and style or manner of expression. Sign your examination number, not your name.

1 Write a report to the superintendent of inspection of the state board of charities, of a visit to an institution containing 800 children between two and sixteen years of age, in which you found the plumbing defective, the air space

insufficient, and the children retained longer than necessary. You may assume any other facts or details you please. 2 Write to the superintendent of inspection of the state board of charities, an account of a visit to a general hospital, with 200 patients, in which you found the nursing service inadequate, and the general administration inefficient. Assume any other facts or details you please.

5 *Questions on the state charities law, dispensary law, constitutional powers of the board, and aims and methods of inspection.*— 1 What are the provisions of the state constitution relative to the state board of charities? 2 Give the name and location of each of the three houses of refuge and reformatories for women. What persons may be committed to each institution? 3 What papers must be furnished by a magistrate when committing an offender to a house of refuge? 4 State the provisions of the state charities law relative to the correction of evils in the administration of institutions. 5 What authority has the state comptroller in regard to the management of the state charitable institutions? 6 What institutions are subject to inspection by the state board of charities? 7 What are the statutory powers of inspectors during an inspection? 8 What penalty does the law provide for an officer of an institution who shall unlawfully refuse to admit an inspector? 9 When inspecting an institution what should be the subjects of inquiry? 10 State in detail how an inspection of an almshouse should be conducted. 11 Mention some of the evils and abuses which are liable to develop in correctional institutions for the young? 12 What would you do in case you discovered that the inmates of an institution were ill-treated? 13 What officer has charge of the public charitable work in (a) a town; (b) a county; (c) a city? Give a brief outline of the duties of the officer in each case. 14 What is a dispensary as defined by the dispensary law? 15 What places may not be used by dispensaries? 16 What are the provisions of law relative to the licensing of dispensaries? 17 How is the principle of classification observed in the care of the unfortunate in this state? 18 Discuss the indeterminate sentence and parole system with reference to the reformation of convicts. 19 By whom is the charge for maintenance of indigent persons in public institutions borne? Answer for (a) the insane; (b) paupers? 20 (a) What is the proper disposition of an indigent person who is a resident of another state or country? (b) Who attends to such cases? (c) Upon what facts does residence depend for this purpose?

6 *Experience.*— See page 15.

Special agent, Department of Excise. Minimum age, twenty-one years. Open to men only. Salary, $1,200. Candidates must not have been engaged in the manufacture or sale of malt or spirituous liquors within two years prior to the time of application and examination. Time allowed, six hours.

Subjects of examination	Relative weights
1 Liquor tax law and other laws bearing on the duties of special agents	4

2	Questions on the duties of the position, including preparation of letters and reports	4
3	Experience	2
	Total	10

Specimen questions

1 *The liquor tax law.*— 1 How is local option secured under the liquor tax law? 2 Define the following terms as used in the liquor tax law: "liquors," "association," "trafficking in liquors." 3 What officers are appointed by the state commissioner of excise? 4 State fully the provisions of the law in regard to special agents. 5 What penalties does the law provide for a person who secures a liquor tax certificate by making false statements? 6 To whom are liquor taxes paid? 7 What penalties does the law provide for a person who continues to traffic in liquors after the expiration of his certificate? 8 For what causes may a liquor tax certificate be revoked? 9 What are the provisions of law in regard to (a) the posting of liquor tax certificates? (b) the selling of liquors on Sunday? 10 What are the provisions of law relative to the filing of consents by applicants for liquor tax certificates? 11 What constitutes a "hotel" as the term is used in this act? 12 What provisions of this act authorize the state commissioner of excise to prevent the keeping of slot machines in saloons? 13 State the provisions of the law in regard to the surrender of liquor tax certificates. 14 What bonds shall be given by applicants for liquor tax certificates? 15 What are the six grades of excise taxes?

2 *Duties.*— 1 Explain the steps necessary in order to prosecute a violator of the liquor tax law. 2 If you should be sent to a no-license town to detect illicit sales of intoxicants, what course would you pursue? 3 Write a letter to a district attorney calling his attention to some violation of the liquor tax law, enclosing a complaint (see question 4), and stating facts to help him in the prosecution of the case. You may assume any facts or details you please. 4 Formulate a complaint of the violation mentioned in your letter and verify it by your affidavit made before John Doe, notary public. 5 Rule an appropriate form and make out an itemized expense account of an imaginary trip from New York to Rochester including stops of a day each at Poughkeepsie, Albany, Utica and Syracuse. 6 If a district attorney should take no action concerning a complaint made by you, what would you do? How could the district attorney be punished for such neglect? 7 What means would you adopt to detect the following violations of the law: (a) gambling in a place where liquor is sold? (b) sales at illegal hours? (c) sales to minors under 18?

3 *Experience.*— See page 15.

Messenger. Minimum age, eighteen years. Open to men only. Salaries usually from $500 to $1,000. Time allowed, six hours.

	Subjects of examination	Relative weights
1	Spelling	1
2	Writing from memory the substance of verbal orders	2
3	Copying from plain copy	1
4	Arithmetic	1

5	Questions on the duties of the position	3
6	Experience	2
	Total	10

Specimen questions

1 *Spelling.*— Fifty easy words in common use. The examiner will first pronounce the word, then define it or exemplify it in a sentence, then pronounce it again, after which the competitor is required to write the word on the spelling blank. The competitor should not write the definition, nor should he begin words with capitals unless they are proper names.

portion	carpenter	threat	salary	cashier
cell	negro	grease	equal	exist
criminal	sugar	visit	fitness	carrying
warrant	pledge	answer	usage	sheet
ceiling	guess	cellar	system	easily
ninety	figure	ginger	useful	patience
careful	breadth	bargain	flannel	diamond
officer	seller	seizing	legible	repair
imprison	arrest	loser	usually	newspaper
sentence	duties	zinc	business	eager

2 *Verbal orders.*— Directions: One of the examiners will dictate three orders of which the candidate is required to write down the substance on this sheet. The order will be given once only and the mark will be given for substance, not for the exact form of the order. Do not write while the examiner is dictating, but listen attentively. Time will be given for writing each order before the next is dictated.

1 Go to the city hall and deliver this letter to Judge Jones. Wait for a reply and then return to the county clerk's office and find out whether Smith's deed was filed before August first. 2 When you go to dinner take this package to the American express office and pay the charges. If you find a package there for the secretary take it to his house before one o'clock. 3 You will today act as doorman at the Court of Appeals. See that the visitors admitted remove their hats and conduct themselves quietly and properly. Attend to the needs of the attorneys connected with cases. When the court adjourns return to the Attorney-General's office.

3 *Copying from plain copy.*— Similar to that for clerk, page 20.

4 *Arithmetic.*— Directions: All the work must appear; give all operations (except mental ones) necessary to find result. 1 Find the sum of the following numbers: 382041, 71572, 146344, 37453, 341202, 50017, 51253. 2 Write in figures (as one number) the following: Eight million, forty thousand and thirteen. 3 Write in Roman characters the numerals up to ten. 4 A workman received $2.25 per day for 307 working days in a certain year; how much did he average per month? 5 Reduce the following fractions to their least

common denominator and find their sum: $\frac{3}{4}$, $\frac{4}{5}$, $\frac{5}{6}$, $\frac{7}{12}$, $\frac{8}{15}$. 6 A man owned three-fifths of a certain lot of grain; he sold one-third of his share for $275. What was the value of the whole lot at this price? 7 During the month of August 450,000 bushels of wheat were shipped from a certain port. During September there were shipped 87,960 bushels more than during August. What was the total number of bushels shipped during the two months?

5 *Questions on the duties of the position.*— 1 What are the domestic rates of postage on first class matter? What is first class matter? 2 An unsealed package containing a printed pamphlet and a blank application for civil service examination weighs 8½ ounces. What is the amount of postage to be affixed? 3 What do you consider the most important qualifications of a messenger? 4 What would you expect to do if assigned to duty as doorkeeper in an office? 5 If directed to deliver an important written message at once to a person whose place of business is at a distance from your office, and you should find in reaching the place that the person was out and might not return for several hours, what would you do? 6 Are you accustomed to the use of the telephone? If unable to reach "Central" from your phone, what would you do? 7 If on duty as night watchman and the gas lamps in your hall should suddenly go out, what ought you to do? 8 State three duties of an orderly or hall man on day duty in a public building. 9 What is meant by "serving" a legal paper? How should it be done? What precautions are necessary? 10 State three duties of a night watchman.

6 *Experience.*— See page 15.

Orderly; watchman, Department of Public Buildings. Honorably discharged soldiers, sailors or marines from the army or navy of the United States in the late civil war, are preferred for these positions. Subjects of examination and relative weights same as for messenger, page 33.

Specimen questions.

1–2 *Spelling and verbal orders.*— Similar to those for messenger above.

3 *Plain copy.*— Similar to that for clerk, page 20.

4 *Arithmetic.*— Similar to that for messenger above.

5 *Questions on the duties of the position.*— 1 What are an orderly's duties in relation to the general public? 2 What information should an orderly acquire as soon as possible after appointment? 3 What are an orderly's duties in relation to the offices on his corridor? 4 If you were on duty as an orderly in the capitol, and should discover a fire in one of the offices after the occupants had gone home, what would you do? 5 If you were on duty as night watchman, and the gas should suddenly go out in your hall, what would you do? 6 What would be an orderly's duty in case the lights in an office on his corridor were left burning after office hours? 7 In case a break in the plumbing should occur in the part of the building under your inspection, what would you do? 8 If a telegram should come for the head of a department after the office force had gone home what would you do? 9 What would be an orderly's duty in case he should see a visitor wantonly destroying public property? 10

For what is an orderly responsible? 11 If your corridor should often be disturbed by disorderly boys what would you do? 12 Tell what you can of the organization of the Department of Public Buildings. 13 If you should find a leak in a radiator during the night what would you do? 14 What is the chief danger from gas leaks?

6 *Experience.*— See page 15.

Court attendant. Minimum age, twenty-one years. Open to men only. Salaries usually $800 to $1,200. Successful competitors are eligible to appointment in the supreme court or other courts to which the state civil service rules apply. Candidates must submit to medical examination by the Commission's examiner in addition to the medical certificate required in the application. Subjects of examination and relative weights same as for messenger above.

Specimen questions.

1–2 *Spelling and verbal orders.*— Similar to those for messenger above.

3 *Plain copy.*— Similar to that for clerk, page 20.

4 *Arithmetic.*— Similar to that for messenger, above.

5 *Questions on the duties of the position.*— 1 What do you consider the most important qualification for court attendant? 2 What do you understand in general to be the duties of a court attendant? 3 What authority in court has a court attendant? 4 Describe how the court is opened for trial. 5 Describe the duties of the attendant who acts as crier. 6 Describe the duties of the attendant who acts as door tender. 7 When a witness is called and fails to respond, what would you do? 8 In case the witness responds, what is your duty if stationed at the witness stand? Describe how you would perform the duty. 9 A juror is called and responds to his name. What is your duty? 10 A juror desires to leave the jury box. What is your duty? 11 A case has been argued before a jury and is closed, and the judge has rendered his charge to the jury. State what would be your duties if placed in charge of the jury in this instance.

6 *Experience.*— See bookkeeper, page 15.

Officer, state charitable institutions. Minimum age, twenty-one years. Open to both sexes. Salaries $300 to $600 and maintenance. Subjects of examination and relative weights same as for messenger, page 33.

Specimen questions

1–2 *Spelling and verbal orders.*— Similar to those for messenger, above.

3 *Plain copy.*— Similar to that for clerk, page 20.

4 *Arithmetic.*— Similar to that for messenger above.

5 *Questions on the duties of the position* (for men).— 1 If ordered to bring a woman inmate before the superintendent and she refused to come, what would you do? 2 If you were on guard duty at night and should hear a violent disturbance in one of the wards, what would you do? 3 In what ways may good behavior on the part of inmates of state institutions be encouraged? 4

If you should see an attendant ill-treat an inmate, what would you do? 5 What qualities should an officer possess in order to be successful in his work? 6 If you were on guard duty at night and should discover a fire in one of the buildings, what would you do? 7 How would you deal with the following classes of inmates: The malicious? the sullen? the stupid? 8 Would you report every slight violation of the rules? Give reasons for your answer. 9 If you should see one inmate assault another, what would you do? 10 Write a report to your chief, explaining an imaginary case of disorder on the part of an inmate, giving full particulars.

5 *Questions on the duties of the position* (for women).— 1 In what ways are the following essential to a healthy state of the body: (a) pure air; (b) exercise? 2 Discuss the physiological value of (a) a cold bath; (b) a warm bath; (c) How often should the inmates of an institution be required to bathe? 3 How is the heat of the body maintained and regulated? 4 Discuss the merits and demerits of the following as articles of food: cheese, coffee, oatmeal, veal, beef, doughnuts, whole wheat bread. 5 Name some articles of food that would be appropriate for a patient recovering from a fever, and tell how each is prepared. 6 Explain what is meant by the terms broiling, frying, roasting and boiling when used in regard to meat, and state the merits of each method. 7 State a plan for the care of a dormitory for young women in good health, in regard to (a) supplies of bedding and bed linen necessary; (b) frequency of change of bed linen; (c) airing; (d) keeping room in order; (e) precautions against vermin. 8 How many cubic feet of air space should be allowed for each inmate of a dormitory? What is a proper temperature for sleeping rooms? 9 Give a plan for the care and treatment of soiled clothing and bed linen from the time it is removed until it is again put in use. What special precautions, if any, would you take with linen from the hospital or sick wards? 10 How often or under what circumstances should disinfectants be used (a) in sinks and water closets; (b) in rooms and wards? (c) State a good and sufficient method of disinfection in each case. 11 What precautions should you take to prevent the spreading of a contagious disease? 12 (a) State means you would employ to prevent waste in the preparation and use of food. (b) In what ways may condemned linen be utilized? 13 What is an officer's duty in regard to the rules and regulations relating to the management of an institution in which she is employed? 14 State some things that might tend to cause insubordination and disorder among inmates. 15 What forms of punishment do you consider efficacious and best for girls from 15 to 18 years of age? State cases in which each might be properly used. 16 Is it advisable for an officer to talk freely with a person not connected with the institution, concerning the management and treatment of inmates? Give reasons for your answer. 17 Are you in robust physical health sufficient for duties of an exacting nature and of high responsibility? 18 Have you had experience in the care and nursing of the sick? If so, to what extent? 19 State particularly your experience and ability in the management and discipline of (a) children; (b) adults.

6 *Experience.*— See page 15.

Guard, state prisons and reformatories. Minimum age, twenty-one years. Open to men only. Salaries $360 and maintenance to $780. Candidates must

submit to medical examination and certain tests of strength and agility by the Commission's examiner, as indicated on page 18. Time allowed, six hours.

Candidates must be not less than 5 feet 7½ inches in height for prison guards, or 5 feet 9 inches for reformatory guards, nor below the minimum chest measure and weight indicated in the subjoined table:

HEIGHT		CIRCUMFERENCE OF CHEST	MINIMUM WEIGHT
Feet	Inches	Inches	Pounds
5	7½	33	137
5	8	34	140
5	9	34½	145
5	10	35	150
5	11	35½	155
6	—	36	160
6	1	36½	165
6	2	37	170
6	3	37½	175

	Subjects of examination	Relative weights
1	Physical examination	5
2	Spelling	1
3	Writing from memory the substance of verbal orders	2
4	Copying from plain copy	1
5	Arithmetic	1
6	Questions on the duties of the position	3
7	Experience	2
	Total	15

Specimen questions

1 *Physical examination.*— See page 18.

2–3 *Spelling and verbal orders.*— Same as for messenger, page 34.

4 *Plain copy.*— Similar to that for clerk, page 20.

5 *Arithmetic.*— Same as for messenger, page 34.

6 *Questions on the duties of the position.*— 1 What are the duties of a guard on the wall? 2 What precautions would you take when overseeing convicts known to be vicious? 3 What means other than punishments may be used to secure good order in a reformatory or prison? 4 If you were overseeing convicts in a shop and one of them should refuse to do the work assigned him, what would you do? 5 Should a guard converse freely with prisoners in his charge? Give reason for your answer. 6 If you had a company of men outside the walls and two of them should start to run away, what would you do? 7 How should a guard conduct himself when off duty? Is he amenable to the prison rules at such time? 8 (a) Are you accustomed to the use of a rifle? If so, to what extent? (b) Have you ever had any military training? If so, describe it. 9 What special care should be taken in counting

prisoners in their cells? 10 What qualities should a guard possess in order to be successful in managing prisoners? 11 In reporting an offense of a convict to the chief officer, what facts or particulars should always be stated? 12 Mention two advantages gained by having the convicts work at useful trades. 13 Make a report to your chief assuming some case concerning a prisoner, giving full particulars.

7 *Experience.*— See page 15.

Keeper, county jail. Minimum age, twenty-one years. Open to men only. Salaries — Kings county, $1,200; New York county, $1,000; Queens county, $730. Candidates must submit to medical examination and certain tests of strength and agility by the Commission's examiner, as indicated on page 18. Time allowed, six hours.

Candidates must not be less than 5 feet 5 inches in height, nor below the minimum chest measure and weight indicated in the subjoined table:

HEIGHT		CIRCUMFERENCE OF CHEST	MINIMUM WEIGHT
Feet	Inches	Inches	Pounds
5	5 to 7½	33	137
5	8	34	140
5	9	34½	145
5	10	35	150
5	11	35½	155
6	—	36	160
6	1	36½	165
6	2	37	170
6	3	37½	175

Subjects of examination and relative weights same as for guard, state prisons and reformatories, page 38.

Specimen questions

1 *Physical examination.*— See page 18.

2–3 *Spelling and verbal orders.*— Similar to those for messenger, page 34.

4 *Plain copy.*— Similar to that for clerk, page 20.

5 *Arithmetic.*— Similar to that for messenger, page 34.

6 *Questions on the duties of the position.*— 1 (a) What three classes of prisoners are committed to the county jail? (b) Is there any distinction as to their rights and treatment? 2 What must always be received and delivered with a prisoner? 3 (a) What is the object of taking a prisoner's record, "pedigree," or description? (b) What facts are usually recorded?

4 (a) What is a "commitment?" (b) What directions must it contain? (c) In whose possession must it be? 5 (a) If a prisoner in his cell should claim to be ill, what would you do? (b) What would you do with a prisoner who refused to leave his cell and threatened injury to any one who tried to remove him? 6 What precautions should be taken to prevent a prisoner charged with a grave crime from substituting himself for another about to be discharged? 7 Suppose one prisoner should assault another while in your charge; write a proper report to the warden of the occurrence and of your action.

7 *Experience.*— See page 15.

Page. **Minimum age, fourteen years; maximum age, eighteen years. Open to boys only. Salaries usually $15 to $35 per month. Time allowed, six hours.**

	Subjects of examination	Relative Weights
1	Spelling	3
2	Letter writing	1
3	Penmanship	2
4	Arithmetic	2
5	Questions on experience and duties of the position	2
	Total	10

Specimen questions

1 *Spelling.*— Same as for messenger, page 34.

2 *Letter writing.*— Write a short letter applying for the position mentioned in the following advertisement. Sign your examination number, not your name.

WANTED.— An office boy, to commence at $16 per month. Address in your own handwriting, stating age, education, previous experience and references as to character, State Civil Service Commission, Albany, N. Y.

3 *Penmanship.*— Marked from exercise in letter writing.

4 *Arithmetic.*— 1 Add 5789, 43793, 2764, 8539, 96394, and from the sum subtract 78692. 2 Find the cost of a barrel of sugar weighing 314 pounds at 5½ cents per pound. 3 If a boy earns $25 a month and his necessary expenses are $13 a month, how many months will it take him to save $100? 4 At $96 a head, how many horses can be bought for $37,920? 5 A certain building has 75 windows, and each window contains 4 panes of glass. What did the glass for the windows cost at $2.50 per dozen panes?

5 *Experience and duties.*— 1 State your age, height and weight. 2 What schools have you attended, and how long in each? 3 To what grade did you attain? 4 What studies have you pursued besides the common branches, and to what extent? 5 Have you ever been regularly employed? If so, state by

whom, for how long and for what wages. 6 Give the present address of your employer or employers. 7 Give the names and addresses of two of your teachers. 8 What do you consider the most important qualifications of a page? 9 What do you understand to be the duties of a page? 10 How would you employ your time while waiting for orders? 11 If you were sent with an urgent message to be delivered in person to a man at some distance from your office and found that the person to whom you were sent was not in, what would you do?

III Examinations for special and technical positions for which eligible lists are constantly maintained.

Assistant civil engineer. Salary $5 to $6 per day when employed. Open to men only. Candidates must have had at least three years' practical experience, one year of which must have been in responsible charge of work. Candidates who have pursued successfully for three years or more a course of study in civil engineering in a school maintaining a standard satisfactory to the examining board will, upon presenting proper evidence of that fact, be credited with one year of the required experience. Time allowed, eight hours.

	Subjects of examination	Relative weights
1	Theoretical and practical questions, including highway construction, strength of materials, engineering construction, hydraulics, mechanics of engineering, specifications and estimates, etc.	10
2	Experience	7
3	Education	3
	Total	20

Specimen questions

1 *Theoretical and practical questions* (*Sheet* 1).— Directions: Slide-rules may be used. Logarithm tables will be furnished by the examiners. Answer 7 of the following questions: 1 A triangular roof truss of white pine consists of two equal rafters, AB and AC, and a tie-beam, BC; the span of the truss is 30 feet and its rise 7½ feet; the uniformly distributed load upon each rafter is 8,400 pounds. Determine the stresses in the several members. 2 What is the maximum uniformly distributed load that may be put upon an oak beam, 12 inches deep and 8 inches wide, placed horizontally between two supports 16 feet apart, if the maximum allowable unit stress is 2,000 pounds per square inch? 3 A wall is 5 feet wide at the top, with a front batter of 1 in 8 and a rear batter of 1 in 12, and is 30 feet high. If the masonry weighs 125 pounds per cubic foot, show whether the wall will be stable or unstable, (a) when it retains water level with the top; (b) when it retains earth level with the top, the weight of earth being 112 pounds per cubic foot and the angle of repose 30 degrees. 4 An ordinary boom-derrick is required to lift a weight of 10 tons at a horizontal distance of 9 feet from the axis of the post. The hanging part of the chain is in 4 falls; the boom is 15 feet long and the top of the post is 16½ feet above ground. Find the stresses in

the boom and tie when the chain passes (a) along the boom, (b) along the tie and mast. 5 In preparing the foundation for a masonry retaining-wall, piles are driven into marshy land. How far may they be allowed to sink under the last blow of a 1,000 pound hammer falling 24 feet, in order to sustain a safe load of 19 tons each, the weight of each pile being 450 pounds? 6 Describe the preliminary survey, using stadia methods, that should be made and the manner of using this survey in determining the new location of an important country highway. 7 A wagon loaded with stone, having a total weight of 6,720 pounds, is kept at rest on a Macadam road. Find the total tension on the traces when the grade is (a) two per cent., (b) ten per cent., neglecting friction in each case. 8 Let m and n be two inaccessible points, and A, B and C be three accessible points, from only one of which (B) can both m and n be seen. Find the distance m n from the following data: course AB, distance 1,280 feet, bearing N. 88° 15′ E.; course BC, distance 1,096 feet, bearing N. 57° 30′ E.; angle mAB = 65° 11′, angle mBA = 48° 19′, angle nBC = 44° 40′, angle nCB = 62° 16′. Given also the general formula $c^2 = a^2 + b^2 - 2ab \cos C$.

(*Sheet* 2).— Candidates are required to answer the *first two* and five other questions (a total of seven out of the nine questions on this sheet). 1 Describe briefly the best method of preparing the sub-grade, placing, rolling, binding and finishing a Macadam road, six inches in thickness after rolling. 2 Discuss the importance and methods of drainage in the construction and maintenance of highways. How would you provide for proper drainage in constructing a Macadam road (a) across a low, marshy country, (b) in hilly country with side-hill locations? 3 What are the most important requirements for first-class Portland concrete; (a) in the selection and preparation of the materials, (b) in the method and details of mixing and laying? 4 What methods would you adopt in preparing the sub-grade, in the construction of a Macadam highway, if you should meet (a) fine, unstable sand, impossible to properly shape and roll, (b) a wet, sticky clay that cannot be properly shaped and rolled? 5 What considerations would determine the selection of the quarry from which stone is to be used for a Macadam road? What are the most important requirements of a first-class stone for such road? 6 Name four of the rocks best adapted to Macadam road construction in the order of their relative value and say something of the physical characteristics and mineral composition of each. 7 Give the reasons for the use of a binder in the construction of a Macadam road. What material makes the best binder and what is the best method of applying it? 8 State the objections, (a) to building the surface of a Macadam road of several different kinds of rock mixed together; (b) to placing the broken stone upon a soft or poorly drained sub-grade. 9 (a) Describe clearly the theory of the actions that take place when lime and cement set. (b) Describe briefly the process of manufacture of natural and Portland cements.

(*Sheet* 3).— In answering the questions on this sheet any books of reference may be used. Answer *four* of the five questions. 1 Given a water-shed in New York state of 10 square miles, with 5% of water surface, calculate the storage in gallons necessary for a daily supply of 5,000,000 gallons, and the dimensions of a spillway to provide for a flood of 80 cubic feet per second per square mile. 2 Given an overflow masonry dam, 8 feet wide on top, with vertical back, front batter 6 inches per foot, height 25 feet, weight of masonry

140 pounds per cubic foot, flood 2 feet over crest, show whether or not the dam will be stable. 3 How would you measure the discharge of a small stream, (a) on which a tight dam is situated, (b) without a dam. 4 Describe in detail how you would make a topographical survey and map of a watershed, 15 miles long, 2 to 6 miles wide, for 5-foot contours, giving organization of field and office force, instruments and supplies. 5 Calculate the opening necessary in a road culvert having a fall of 3 inches in 30 feet, to carry the flood-flow of a brook, draining 1.25 square miles of farming country, having a general slope of 5 feet in a thousand.

2–3 *Experience and education.*— See page 15.

Leveler. Open to men only. Salary $4.50 to $5 per day when employed. Candidates must have had at least two years' practical experience. Candidates who have pursued successfully for three years or more a course of study in civil engineering in a school maintaining a standard satisfactory to the examining board will, upon presenting proper evidence of that fact, be credited with one year of the required experience. Time allowed, eight hours.

	Subjects of examination	Relative weights
1	Theoretical and practical questions, including mensuration and use of logarithms, plane trigonometry, topographical surveying and leveling, elementary mechanics, theory and use of rod, level and transit, highway construction, etc.	5
2	Experience	3
3	Education	2
	Total	10

Specimen questions

1 *Theoretical and practical questions.*— Sheets 1 and 2 same as for assistant engineer. (Sheet 3.) In answering the questions on this sheet, any books of reference may be used. Answer *four* of the five questions. 1 Calculate the number of gallons of water per day that would be delivered by a new 10-inch cast-iron pipe, 4,000 feet long, on a grade of 5 feet in a thousand, flowing full, if the pipe has one right angle turn with a 3 foot radius and one 45 degree turn with a 9 foot radius. 2 A hole 6 inches square is made in a ship's bottom 20 feet below the water line. What force must be exerted to keep the water out by holding a piece of board against the hole, if sea-water weighs 64 pounds per cubic foot? 3 What amount of water could we reasonably expect would be discharged by a smooth, open wooden flume of rectangular cross-section, if the flume is uniformly 4 feet wide, the water 2 feet deep, and the slope of the water surface be taken at 1 foot per thousand? 4 Find the slope to be given to the bottom of a waterway cut in gravelly soil so that it may carry 180 cubic feet of water per second. The dimensions of the waterway are 35 feet top width, 7 feet depth, and 9 feet bottom width. Use Kutter's Formula. 5 Calculate the opening necessary in a road culvert, having a fall of 3 inches in 30 feet, to carry the flood-flow of a brook, draining 1.25 square miles of farming country, having a general slope of 5 feet in a thousand.

2–3 *Experience and education.*— See page 15.

Rodman. Salary $3.50 to $4 per day when employed. Open to men only. No practical experience is required. Time allowed, six hours.

	Subjects of examination	Relative weights
1	Theoretical and practical questions, including mensuration and use of logarithms, plane trigonometry, elementary surveying and leveling, theory and use of rod, level and transit, highway construction	6
2	Experience	1
3	Education	3
	Total	10

Specimen questions

1 *Theoretical and practical questions.*— Directions: The work of computation must be shown in full. Slide-rules may be used. Logarithm tables will be furnished by the examiners. 1 Solve completely the simultaneous equations $\sqrt{xy} - \sqrt{x-y} = 11$ and $x^2y - xy^2 = 60$. 2 Compute to two places of decimals the value of v from the formula $v = \frac{\sqrt{2gh}}{\sqrt{1 + \frac{81}{256}\left(A + B + 2C + 4f\frac{l}{d}\right) + D}}$. When $g = 32.2$, $h = 25$, $A = .505$, $B = 2.06$, $C = .294$, $f = .006$, $l = 80$, $d = \frac{1}{6}$ and $D = .183$. 3. Find by logarithms the value of $\frac{\sqrt{.00281}}{.075^{4.2}}$. 4 A and B are two stations on opposite sides of an impassable gorge; they can both be seen from station C and their distances from C are 1,198 feet and 1,284 feet respectively. The angle at C between the transit lines AC and BC is 65° 10½′. Find the distance from A to B. 5 A road 12 feet wide is to be extended across between two parallel banks by filling in with earth and stone. The bank on one side has a batter of 1¼ to 1, and on the other of 1½ to 1; each slopes down to the bed of a stream 5 feet wide and 14 feet below the level of the road. The filling is to have a batter of 1½ to 1 on each side; how many cubic yards will it contain? 6 If the safe tensile stress allowed per square inch for iron bars is 12,000 pounds, what should be the size of round bar selected to withstand a pull of 12½ tons, if the commercial sizes vary by $\frac{1}{16}$ inch diameter up to 1½ inch and by ⅛ inch above that size? 7 Four wheels, each loaded with a weight of 5 tons and spaced 5 feet apart, roll over a beam of 18 feet span. What position of the wheels gives the maximum bending-moment, and what is the amount of that bending-moment? 8 Give in their proper order the adjustments of the engineer's transit. 9 If in running a transit line it should meet an obstruction, as a house, how would you continue the line beyond the obstruction? Describe three methods. 10 Given the following data, supply the missing distances, using the method of latitudes and departure:

Stations.	Bearings.	Distances.
1	N. 35° E.	270
2	N. 83½° E.	129
3	S. 57° E.	?
4	S. 34¼° W.	?
5	N. 56½° W.	323

11 Write a set of transit notes for the center line of a highway a quarter-mile in length, to include at least two turns. Explain how you would measure the angles and the method you would use to eliminate errors in their measurements. 12 Write a set of level notes for the above road, giving turning-points and bench-marks, assuming that the road passes over a knoll and across a hollow. 13 Explain how you would take and record the elevations to the right and left of your transit line in the above. 14 Supposing that the grades on this highway are to be reduced by cuts and fills, explain how you would locate and set the slope stakes for that purpose. 15 Explain how you would select your bench-marks and turning-points, in taking levels, and name and describe the rod you would prefer to use. What precautions should be taken in the use of the rod in order to make accurate measurements? 16 Sketch in pencil 5-foot contour lines from the elevation points given below; mark the elevations for each contour.

(See questions 9–10 for engineering draughtsman, page 46.

2–3 *Experience and education.*— See page 15.

Chainman. Minimum age, eighteen years. Open to men only. Salary $2.50 to $3.00 per day when employed. Time allowed, six hours. No practical experience is required. Subjects of examination and relative weights: Arithmetic and use of chain, 8; experience and education, 2.

Specimen questions

1 A wall 1,690 feet long is to be built in 30 days, and it is found that 7 men in 14 days have completed only 490 feet; how many additional men must be employed for the remainder of the time so that the wall may be completed in the required time? 2 Find the cubic yards of masonry in a wall 88½ feet long, 10 feet high, 1 foot 6 inches thick at the top, 3 feet 6 inches thick at the bottom, with sides sloping uniformly from the top to the bottom. 3 Two adjoining lots of city land 132 feet deep contain respectively 31 square rods 112½ square feet and 35 square rods 36 square feet. These two lots together are to be redivided into five equal building lots. What will be the width in feet of each lot? 4 If the rainfall on a certain day was ¼ inch, how many gallons of water fell on a rectangular piece of land 22 rods, 9 feet wide and a quarter-mile long? (One gallon contains 231 cubic inches.) 5 What is the length of an arc of 30 degrees in a circle whose diameter is 18 feet? (Give answer to 3 decimal places. The circumference is 3.1416 times the diameter.) 6 (a) If you were sent to make a chain survey of a piece of rough meadow land, what tools or instruments would you need to take with you? (b) Explain carefully and in detail how you would begin the work and how proceed with the measurement of the first course? (c) How would you keep the measurement always in a straight line with the points from which and to which you are chaining? 7 Suppose that you have arrived at a corner or angle in the meadow and have with you neither transit nor surveyor's compass, how would you measure the angle in the line you are chaining so that a map could be made from the measurements and notes you are taking? 8 (a) How would you proceed if your line crosses a broad gully very steep on one side? Explain carefully and in detail. (b) Suppose that your line passes over a

hillock that shuts out from view the rod toward which you are chaining; how would you overcome the difficulty? (c) How would you proceed if a large tree stood in the way of the line you were chaining? 9 (a) What would you do if a hundred-foot length, in your measurement, should end in the middle of a brook that flows swiftly over a smooth stone bottom? (b) What would you do if your line crossed a bed of quick-sand or a deep marsh more than a chain length across? Explain carefully. 10 (a) How would you lay out a line at right angles to the course you have just measured? (b) Having finished your survey, how would you fold your chain? 11 If your hundred-foot chain is ⅝ inch too short, what is the true length of a line that you have measured and recorded as 2,416.5 feet in length? 12 Have you had any experience as chainman or assistant in a survey? If so describe in detail, giving time, place and length of service. What experience or other education have you had that you consider qualifies you for duties of chainman?

Engineering draughtsman. Open to both sexes. Salaries $4.00 to $5.00 per day. The examination will relate entirely to the duties of the position and will consist, in part, of practical draughting. Time allowed, eight hours.

Specimen questions

Directions: The work of computation must be shown in full. Logarithm tables will be furnished by the examiners. 1 Two straight roads meet at an angle of 58¼ degrees. Find the distance between a tree on one of the roads a half-mile from their point of meeting, and a flag-pole on the other road 3,640 feet from the same point. 2–4 From the following bearings and distances, balance the survey, plot to suitable scale and compute the area in acres by the method of co-ordinates:

Station A.....	N. 51° 50′ E.	Distance, 1,063 feet.
Station B.....	S. 29° 45′ E.	Distance, 410 feet.
Station C.....	S. 31° 44′ W.	Distance, 769 feet.
Station D.....	N. 61° 0′ W.	Distance, 713 feet.

Letter the bearings and distances on your map in stump writing. 5 Indicate the following by means of neat free-hand pen drawings, each to occupy a space 1″ × 1½″: (a) quarry-faced masonry; (b) brick work in Flemish bond; (c) broken range masonry; (d) forest with both evergreen and deciduous trees; (e) marsh with stream through it. 6 Draught the following title in letters of three different sizes, using stump or round writing or some other style of free-hand lettering that you can do neatly and rapidly: "Plans for improving the Highway between Buffalo and Albany, a distance of 310 miles, passing through Medina, Rochester, Clyde, Syracuse, Oneida, Whitesboro, Utica, Little Falls and Schenectady. Scale, 1″=100′." 7–8 Draw plan, elevation and cross-sections for a semi-circular arch-culvert, of 15 feet span, under a highway 22 feet wide, allowing 2 feet between the top of the arch and surface of road, with parapets 2 feet 6 inches wide, 3 feet high. Design suitable wing-walls for a flood 3 feet deep. Supply all other needed data.

9–10 Draw 5 foot contour lines from the elevation points given on this sheet; mark the elevations for each contour and indicate the probable location of streams.

From the contour sheet as you have prepared it, draw on separate sheet two sections of the ground, one through the line N. S., the other though E. W. Indicate the vertical scale used.

2 *Experience.*— See page 15.

Architectural draughtsman. Open to both sexes. Salaries $3.00 to $5.00 per day. Time allowed, eight hours. Candidates should provide themselves with drawing instruments and board suitable for paper 8½ x 14 inches.

	Subjects of examination	Relative weights
1	Practical and theoretical questions and drawings.....	6
2	Experience and education	4
	Total	10

Specimen questions

1 *Practical and theoretical questions and drawings.*— 1 Under what circumstances are the following scale used in making drawings ⅛″ scale, ¼″ scale, 1″ scale, and full size? 2 Describe the usual methods of indicating in the drawings the various materials to be used. 3 Give the average dimensions of the following parts of a staircase: height of riser, width of tread, height of handrail, and how is this dimension measured? 4 A brick wall of a building exerts a pressure of five tons per square foot at its base, how would you prepare the footings for such a wall, (a) when quick-sand is found? (b) when good hard clay and sand is found? Make a drawing of the above giving the thickness of wall, width, thickness and materials of footings. 5 Calculate the dimensions and the distance on centers of spruce beams which are to be used in the floor of a warehouse, the span being 20 feet. 6 What weight will a wall built of good sound brick sustain per square foot if, (a) laid in Portland cement mortar, (b) laid in Portland cement and lime mortar, (c) laid in lime mortar. 7 A building is to be twenty stories high. What method of construction would you employ and why? Describe this method in detail. 8 Make a diagram of a scissor truss, a hammer beam truss, a king post truss, a queen post truss, and a belly truss. 9 Calculate the size of a bluestone template which it would be necessary to place under each end of a girder, carrying a distributed load of 235 tons. The girder composed of two 15″ steel I-beams. How much bearing should the girder have? 10. State the safe deflection of a steel beam. 11 When is it necessary to place stone bond plates in a brick pier? 12 Describe the various methods of carrying the weight over openings in a wall. 13 Name the five orders of Architecture and state the height of the column in each order, expressed in diameters. Make a free hand sketch of the capital in each order. 14 Make a drawing to scale, as carefully as you can of the entire Doric order. 15 Make a drawing of a classic pediment showing the method of determining the slope. 16 Draw to a scale of ¼″ to the foot the plan of a bath room, 6′0″ × 8′0″, having a door at one end and a window at the side. Indicate in the conventional way on this plan, a bath tub, a water closet, a wash basin, and figure the approximate dimensions of each fixture. 17 Make a drawing to scale of the plan, elevation and section of a brick fireplace showing the hearth, the flues, etc., and the method

of constructing the throat. Also draw in dotted lines the framing of the floor showing header and trimmers. 18 Draw in free hand perspective the cornice and entablature of the Corinthian order. 19 Draw to a scale of 1 inch to the foot an ornamental wrought iron railing and newel post. 20 Make a complete sectional drawing, showing the proper thickness of the wall for each story, footings, etc., of the front bearing wall of a five-story building with cellar. The floor load to be taken at 125 lbs. per sq. foot, span 20 feet. The wall to be faced with 4″ stone ashlar in the first story and pressed brick for the upper stories. The cellar wall of rubber stone. The bottom sand. The section to be taken through the windows. Make this drawing complete in every detail and figure same.

2 *Experience and education.*— See page 15.

Inspector of building. Salary $5.00 per day when employed. Open to men only. Time allowed, six hours.

	Subjects of examination	Relative weights
1	Practical questions relating to various branches of inspection and the interpretation of architectural drawings	6
2	Experience and education	4
	Total	10

Inspector of public works. Salary $5.00 per day when employed. Open to men only. Time allowed, six hours.

	Subjects of examination	Relative weights
1	Education and experience	4
2	Practical questions on materials, construction and inspection	6
	Total	10

Specimen questions

1 *Education and experience.*— See bookkeeper, page 15.

2 *Practical questions.*— 1 What differences should be observed between concrete construction for watertight retaining walls and for ordinary dry foundations? 2 Name all the ways you can suggest of slighting cement masonry. 3 What are the common defects of stone, and how discovered? 4 In what cases would you advise the use of grout rather than a full bed of mortar in building stone-work? 5 Give the essential points in a first-class job of brickwork in cement, including materials and workmanship. 6 Describe some simple expedients to cheapen quick-sand excavation. 7 Describe the construction of the cheapest safe coffer dam, subject to a head of 12 feet of water and extending between impervious banks 100 feet apart. 8 Describe circumstances under which wheelbarrow excavation is the most economical method of handling earth. Same for casting with shovels; handling with carts; handling with cars. 9 Suppose in excavating for the foundations of a bridge abutment of a lock-wall, that the rock which was thought to be practically level at a certain depth, is found to fall away rapidly over a part of the foundation; what would you require of the contractor? 10 Does it require more or less earth than that in a given cutting to make an embankment of the same size? How is this

provided for in making the embankment? 11 In building a canal, suppose the bottom to be but little below the natural surface; state under this condition every precaution that should be taken or may be necessary to prevent seepage at the junction of the bank with the ground and to insure the stability of the bank. 12 Describe the materials best fitted for puddling, and how they should be used in building a bank to insure imperviousness to the passage of water. 13 What are shakes? checks? What is sapwood, and how told? What is meant by brash timber, and how told? 14 What kinds of timber last best in wet places? 15 Where round drift bolts are to be used, as in crib-work, etc., state the requirements to be observed in boring for, driving them, etc., to get the strongest hold in the timber. 16 State all the defects you would look for in piles to be used on an important work. 17 (a) How would you determine that a pile has been driven to a bearing? (b) How would this be affected by piles brooming at the top, and what is the remedy? (c) Which is the most effective method of driving, by frequent blows with small fall of ram, or slow blows with a greater fall? 18 How should iron-work be prepared for repainting and what materials and method of application will give the most permanent coating?

Chief engineer, state hospitals, departments and institutions. Open to men only. Salaries $900 to $1,200 and maintenance. Candidates who are graduates in mechanical or electrical engineering of duly established schools of technology, or who have learned the trade of machinist, boiler-maker or steamfitter, must have had two years' practical experience as engineer of stationary engines and electrical machinery. Other candidates must have had at least five years' experience as fireman, oiler, assistant engineer or engineer, including at least two years as engineer of stationary engines and electrical machinery. Time allowed, six hours.

	Subjects of examination	Relative weights
1	Practical and theoretical questions upon steam and electrical machinery, and engineering practice	6
2	Education and experience	4
	Total	10

Specimen questions

1 *Practical and theoretical questions.*— 1 If you were about to take charge of a plant in a state institution as chief engineer, how would you divide the work between yourself, your assistant and your fireman, and what rules would you establish for the maintenance of discipline and for the proper care of the engine and boiler rooms? 2 In the construction of steam boilers what defects are often to be found, due to improper method (a) of handling and shaping the plates, (b) of riveting, (c) of calking? 3 State and explain five causes of boiler explosions. 4 Give three advantages of a feed-water heater. 5 (a) What methods would you employ for securing economy in fuel? (b) What is your opinion as to the economy to be gained by the use of a steam jet or by wetting the ashes? (c) What kind of fuel is most destructive to the boiler? 6 The length of the lever of a safety-valve from the fulcrum to ball is 24 inches, distance from fulcrum to valve 3 inches, area of valve 7 sq. inches,

weight of ball 52 lbs. Find the pressure in lbs. per sq. inch at which the valve will open. 7 The pressure on the steam piston of a pump is 40 lbs. per sq. inch, area of piston 4½ sq. inches, length of stroke 5.5 inches, number of double-strokes per minute 35. How many gallons of water will the pump lift 20 feet in one hour, if the water weighs 8⅓ lbs. per gallon? 8 Explain five precautions or rules you would observe if you were installing pipes to conduct steam from the boilers to the engines through a distance of 100 feet. 9 What is a steam trap; when should a steam trap be used? Describe some well-known form or make of steam trap, explaining its action. 10 Make a drawing of a typical indicator card and explain carefully what each line and point shows. 11 How may the indicator card be used to find the horse-power of an engine? What facts must be known? Assume average values for these quantities and find the horse-power in the supposed case. 12 What repairs should the chief engineer be prepared to make at any time? 13 Write a set of specifications for preparing the bed and for building the foundation for a large stationary engine on sandy soil. 14 What causes engines to get out of line? How would you line up an engine? 15 How would you set a slide-valve? What advantages has the Corliss four-valve engine over the slide-valve engine? 16 State fully the advantages of the automatic cut-off. 17 If the vacuum in a 14 × 20 condensing engine running at 250 revolutions per minute is 26 inches, what is the gain in power due to the condenser? 18 What rules should always be observed in starting up a steam engine? 19 Explain fully five things you would consider in selecting a dynamo for an electric-lighting plant. 20 Explain carefully four causes for noise in running a dynamo or motor and give the remedy for each. 21 Explain carefully five reasons why a dynamo might fail to generate the proper current, and give the remedy for each cause. 22 How many 110 volt, 16 candle-power incandescent lamps, using 3¾ watts per candle-power, can be run by a generator furnishing 22.4 kilowatts at 112 volts, allowing 1% loss for wiring and connections? What will be the strength of the current in amperes through each lamp and through the generator? (Watts equal volts times amperes.)

2 *Education and experience.*— See page 15.

Electrical engineer, state hospitals, departments and institutions. Salaries usually $900 and maintenance. Open to men only. Candidates who are graduates in mechanical or electrical engineering of duly established schools of technology must have had at least two years' practical experience in electrical work or in the operation of steam and electrical machinery. Other candidates must have had at least five years of such experience. Time allowed, six hours.

Subjects of examination	Relative weights
1 Practical and theoretical questions upon electrical apparatus and engineering practice	6
2 Education and experience	4
Total	10

Specimen questions

1 *Practical and theoretical questions.*— 1 Suppose it becomes desirable to increase the power of an engine already installed. Explain four ways by which

this may be done. 2 What is the steam engine indicator? Explain how it is used in getting the horse-power of an engine. By what other method may the horse-power of an engine be found? 3 If you were installing a plant in a state hospital, what ways would you suggest for using the exhaust steam from the engines? Explain carefully. 4 Explain carefully five points to be regularly observed in the care and running of steam engines. 5 Explain five reasons why a dynamo might fail to generate, and give the remedy for each. 6 What is necessary in order to successfully join up alternators in parallel? Why is it difficult with very high speed alternators? 7 Explain four methods of increasing the electromotive force of a dynamo, and give the objections, if any, to each. 8 Describe the construction and action of a watt-meter. How should it be joined up to find the power used by an electrical machine? 9 Describe the construction and use of the transformer in electric lighting. When and with what kind of current should it be used? 10 Explain the difference between series, shunt and compound winding of dynamos and for what kind of service each is best suited. 11 Mention and explain five errors in dynamo construction that you would not overlook in selecting a generator for an institution plant. 12 A number of 110-volt lamps and a 220-volt motor are run on the three-wire system, the lamps being between the generators and motor. However, it is found that when the motor is running light with but 110 volts all the lamps are bright, but when the motor is stopped a part of the lamps on one side of the system nearest the motor go out. Explain what accident has happened and how the above condition is possible. 13 Mention three characteristics common to almost all makes of high-speed, closed-coil, direct-current generators, and explain why these peculiarities of construction have been so generally adopted. What kind of dynamo is best suited to incandescent electric lighting? Why? 14 On a 110-volt circuit, what is the total current when one 16 candle-power lamp of 220 ohms resistance is turned on? When two lamps are turned on; when four lamps are turned on? What is the current through each lamp in each case? 15 What is meant by the "lead" of the brushes on a dynamo commutator? Explain carefully why it is necessary to give them "lead" and what determines the amount of it. How does the "lead" on a dynamo differ from that on a motor and why? 16 In what way must 12 Bunsen cells be joined up together so as to give the maximum current through an extra-polar resistance of 2 ohms, if the electromotive force of each cell is 1.86 volts and its resistance 1.5 ohms? 17 A circuit has a back electromotive force of 1,600 volts and a resistance of 20 ohms. What electromotive force alternating will be required to send through it a current of 10 amperes? 18 Electric power is delivered at a factory at 400 volts through 20 miles of wire whose resistance is 100 ohms, the current strength being 6 amperes. What is the efficiency? What would be the efficiency if, with the same current strength, the power is delivered at 1,400 volts?

2 *Education and experience.*— See page 15.

Assistant steam engineer; assistant electrical engineer. Open to men only. Salaries usually $40 to $60 per month and maintenance. Candidates who are graduates in mechanical or electrical engineering of duly established schools of technology must have had one year's practical experience in electrical work or in the operation of stationary steam engines and electrical machinery. Other candidates must have had three years' practical experience

as machinist, boiler-maker, steamfitter, oiler, fireman, engineer or electrician, including at least one year in the operation of stationary engines and electrical machinery. Time allowed, six hours.

	Subjects of examination	Relative weights
1	Practical technical questions	6
2	Experience and education	4
	Total	10

Specimen questions — Assistant steam engineer

1 *Practical technical questions.*— 1 What do you understand to be the duties and responsibilities of the assistant steam engineer in a state institution? 2 What precautions would you regularly take to insure against injury to the boiler when in operation? What is the routine of a watch in the boiler room? 3 How should a boiler be fired in order to secure the greatest efficiency and economy of fuel? 4 What precautions and methods would you adopt and follow to prevent scaling in your boiler? What would be the probable results of excessive scaling? 5 If an injector failed to work where and how would you look for the trouble? 6 Explain carefully five causes that might prevent the proper working of a steam pump. 7 How often would you clean and inspect your boiler? Explain carefully and in detail how you would make such inspection. 8 How should a boiler be operated when the feed-water is muddy? How, when the water is clear, but contains considerable lime or other mineral in solution? 9 Give three rules that should always be observed in starting a steam engine and give the reason for each. 10 What precautions and care should be taken to prevent unnecessary wear of the engine? 11 Explain the differences in construction and operation of the condensing and the non-condensing engines. Where would the one or the other be properly employed? 12 How would you get steam on a condensing engine, and set it in operation if you were called upon to take the first watch? 13 What would you do if you should find a hot journal and bearing, and how would you prevent a recurrence of that difficulty? 14 What should be done if water were coming over into the cylinder? What are the objections to water in the cylinder or dangers connected with it? 15 Explain the use of the steam engine indicator. Draw an indicator diagram and explain what each line and point shows. 16 The area of a safety valve is 10 sq. in.; the distance of the valve stem from the fulcrum, 4 in.; the length of the lever from the fulcrum, 36 in.; the weight of lever, which is of a uniform width and thickness, 14 lbs.; the weight of the valve and stem, 7 lbs. At what distance from the fulcrum should a weight of 80 lbs. be placed in order that the valve should open at a pressure of 64 lbs. per square inch? 17 How and with what material would you pack a pump that is to be used with hot water? In practice, to what height can cold water be drawn by a suction pump? Can hot water be pumped in the same way to the same height; if not, why? 18 What is the cause of pounding in a steam radiator; what would you do to stop it and to prevent it happening again? 19 Explain carefully five points to be observed in starting a dynamo and in examining it preparatory to starting. 20 Explain carefully five things to be regularly observed in running dynamos and motors.

2 *Education and experience.*— See page 15.

Specimen questions — Assistant electrical engineer

1 *Practical technical questions.*— 1 Explain carefully five points to be regularly observed in the running and care of steam engines. 2 Compare the advantages of high-speed and slow-speed engines. Explain carefully, giving at least three points of comparison. 3 What is the cause of corrosion in a steam boiler, both internal and external? What means should be taken to prevent it? 4 What is the cause of foaming in a steam boiler and how may it be stopped? Is there serious objection to foaming; if so, why? 5 What is an injector? What care and attention should be given it? When would you prefer to use an injector, and when a feed-pump? 6 What are the essential parts of a dynamo? Explain the use or office of each. 7 Explain carefully five things to be regularly observed in running dynamos or motors. 8 Explain carefully five points to be observed in starting a dynamo and in examining it preparatory to starting. 9 Name and explain five electrical units in common use. 10 Explain three causes why a dynamo or motor might race, and give the remedy for each. 11 Explain five causes for sparking at the commutator, and give the remedy for each. What dangers are connected with sparking? 12 Explain in detail your method for connecting in parallel two compound-wound generators. What special precautions should be taken? 13 Explain carefully how secondary or storage batteries may be used to advantage when running generators for electric lighting. 14 Explain in detail how you would repair a badly worn commutator. 15 Describe carefully the proper installation and insulation of electric light mains in a building. 16 In what three ways do incandescent lamps wear or give out? How long do they usually last? What number of watts and volts are usually required for a 16 candle-power lamp?

2 *Experience and education.*— See page 15.

Experts and agents, Department of Agriculture. Open to men only. Salaries $60 to $75 per month. Time allowed for each examination, six hours.

(a) **Milk expert.** The duties of the position are to enforce the laws relating to the sale of adulterated milk and cream.

Subjects of examination	Relative weights
1 Questions on milk	6
2 Experience	4
Total	10

Specimen questions

1 *Milk.*— 1 Describe the odor, taste and other physical properties of fresh milk of good quality. 2 How is milk most commonly adulterated? In what ways would the qualities named above be affected by such adulteration? 3 What is meant by pasteurization? For what purposes is it applied to milk? 4 What normal change occurs in milk on standing? Why? 5 What is the ordinary proportion of fat to solids not fat in milk? If this proportion is disturbed how may it be detected? 6 If an ordinary lactometer stands at 106

in a sample of milk at 66 degrees F. and the milk contains 3.2 per cent. of fat, what is the specific gravity and the percentage of solids not fat? Has it been adulterated? 7 What conditions would lead you to take a suspected sample of milk for analysis? What legal requirements must be observed? 8 Illustrate by diagram the graduation on the stems of two common forms of lactometer. Show the points of correspondence and give the names of the lactometers. 9 What are some of the causes of variation in the percentage of fat in normal milk? What is the range of such variation? 10 What are the most common fermentations of milk that make it unfit for use for domestic purposes? How may such fermentations be prevented or held in check?

2 *Experience.*— See page 15.

(b) **Butter expert.** The duties of the position are mainly the instruction of butter-makers with a view to the improvement of the New York state product.

	Subjects of examination	Relative weights
1	Questions on milk	2
2	Questions on butter	4
3	Experience	4
	Total	10

Specimen questions

1 *Milk.*— Same as for milk expert above.

2 *Butter.*— 1 What are the four most important fats in butter? Which are volatile and which non-volatile? How does a change in their relative proportion affect the texture of butter? 2 Why is cream separated? How is it done most perfectly and economically? 3 Describe the essential parts of a centrifugal separator and the principles involved in centrifugal separation. 4 How would you treat cream from the time it comes from the separator until it is ready to ripen? 5 What is a pure culture starter? How is it prepared and used to ripen cream? 6 25 c. c. of cream require 10 c. c. of decinormal alkali to neutralize it. What per cent. of lactic acid is present? Is the cream under- or over-ripe for churning? 7 1000 pounds of milk with 3.1 per cent. fat; 1500 pounds with 3.9 per cent. fat and 2000 pounds with 5.6 per cent. fat are delivered to a creamery and 220 pounds of butter are made. What is the percentage of overrun? How many pounds of fat are required for a pound of butter? Is this good creamery practice? Why? 8 What is the theory of washing butter, and how does it affect the flavor? 9 What is the best salt for butter? 10 Describe perfect texture, flavor and color in butter.

2 *Experience.*— See page 15.

(c) **Cheese expert.** The duties of the position are mainly the instruction of cheese-makers with a view to the improvement of the New York state product.

	Subjects of examination	Relative weights
1	Questions on milk	2
2	Questions on cheese	4
3	Experience	4
	Total	10

Specimen questions

1 *Milk.*— Same as for milk expert above.

2 *Cheese.*— 1 When is milk in the best condition to begin the process of cheese manufacture? 2 Name three distinct methods for determining this condition. 3 Explain in full why rennet should be added to the milk at any given temperature. 4 What is meant by cooking the curd? Why is it done? 5 What precautions are of use to prevent loss of fat during the whole process of cheese-making? 6 In how far is the fat content of milk a measure of its value for cheese-making? 7 What conditions are essential to perfect curing? How would you secure them in the construction of a curing room? 8 What is "cheddaring"? What purpose does it serve? 9 Describe perfect flavor, texture and color in an export cheese. 10 Briefly describe Stilton, Roquefort, Edam, Camembert, Cheddar and Neufchatel cheeses.

2 *Experience.*— See page 15.

(d) **Vinegar expert.** The duties of the position are to enforce the law establishing a legal standard for vinegar and forbidding the sale of adulterated vinegar.

	Subjects of examination	Relative weights
1	Questions on vinegar	6
2	Experience	4
	Total	10

(e) **Veal inspector.** The duties of the position are to enforce the laws relating to the sale or transportation of "bob" veal.

	Subjects of examination	Relative weights
1	Questions on the law and duties	6
2	Experience	4
	Total	10

Specimen questions

1 *Law and duties.*— 1 How old must a calf be before it can be lawfully sold as veal? 2 By what means would you determine a hog-dressed calf was four weeks old? 3 How would you determine the difference between the carcass of a calf three days old from one that is four weeks old? 4 At about what age does the healthy umbilicus or navel string heal? 5 What causes might prevent the healing of the umbilicus or navel string? 6 How would you determine the difference between a calf that was born dead, and a calf that was born alive? 7 How should dressed calves be marked for shipment

in this state? 8 How would you determine the difference between a dressed large dog and a dressed calf? 9 How can you detect the difference between the carcass of a well fed calf of three weeks of age and that of a poorly fed calf of five weeks of age? 10 Under what conditions, other than under age, would an inspector be authorized in seizing the carcass of a calf offered for sale?

2 *Experience.*— See page 15.

(f) **Bee inspector.** The duties of the position are to enforce the law for the extirpation of "foul brood" and other bee diseases.

	Subjects of examination	Relative weights
1	Questions on the law and duties	6
2	Experience	4
	Total	10

Inspector of nurseries, Department of Agriculture. Open to men only. Salary $100 per month, during the season. The duties of the position are the inspection of nurseries, orchards and nursery stock and the suppression of fruit tree diseases and pests, especially yellows, black-knot and San José scale. The questions in entomology, horticulture and botany will relate especially to the duties. Time allowed, six hours.

	Subjects of examination	Relative weights
1	Entomology	3
2	Horticulture	2
3	Botany	2
4	Experience and education	3
	Total	10

1 *Entomology.*— 1 Give the superficial characteristics of the San José scale in its various forms. 2 Describe the life history of the San José and give some idea of the specific characters of the female. 3 How should an orchard infested with San José scale be treated? 4 What relation exists between the structure of insects and the methods which should be employed in their control? Give examples illustrating your answer. 5 Outline a method of inspecting, stating what should be looked for, where and in what manner. 6 Describe briefly three of our common native scale insects. 7 What are the essentials in fumigating nursery stock? 8 Describe briefly the stages and places in which the following insects are found in winter: apple tree tent caterpillar, canker worms, forest tent caterpillar, bud moth, plant lice. 9 Name five insecticides and state how and for what each should be used. 10 Give a brief account of ten insects which injure fruits in this state.

2 *Horticulture.*— 1 Describe the preparation of three fungicides and state the use of each. 2 Give general directions for the spraying of an orchard. 3 Describe the principal modes of plant propagation. 4 Describe a good

method of storing nursery trees in winter. 5 What treatment would you advise to prevent peach leaf-curl? 6 Mention the causes which prevent fruit from setting. 7 Name the most common vineyard diseases.

3 *Botany.*— 1 What is meant by "fungous diseases?" 2 What fungi have been destructive in the orchards and nurseries of this state? 3 Give an account of black knot and its treatment. 4 What causes galls on the roots of nursery stock, what trees and shrubs are affected and what remedies would you suggest? 5 Give the cause of peach yellows. What remedy would you advise for this disease? 6 What are the functions of the leaves of a plant? 7 Describe pollination and fertilization in flowers. 8 Give an outline of the classification of the principal fruit trees and shrubs of this state.

4 *Experience and education.*— See page 15.

Physician, fourth and fifth grades. Open to both sexes. Salary usually $600 and maintenance. Applicants must be licensed medical practitioners of this state. This list is intended to provide eligibles for the position of medical interne in the state hospitals and for positions of similar grade in other state and county institutions. No examination is required, but the names of qualified applicants will be entered upon the eligible list from time to time as their applications are received with the rating obtained in the state examination for license to practice as certified by the examiners of the University of the State of New York. Separate lists will be maintained for the schools of medicine recognized by the University. Persons licensed to practice prior to the requirement of examination by the State Board will be examined by the Commission.

Physician, sixth grade. Open to men only. Salaries $900 to $1200, usually with maintenance. This examination is intended to provide eligibles for the position of junior physician in the state hospitals and for positions of similar grade in other institutions. Applicants must be licensed practitioners and have at least one year's actual experience on the medical staff of a public general hospital or have served at least one continuous year as medical interne in a state hospital for the insane. Subjects of examination: anatomy, physiology, materia medica and therapeutics, chemistry, obstetrics, theory and practice, surgery. Time allowed, six hours.

Specimen questions

1 Give the minute anatomy of the spleen. 2 Locate the Island of Reil. 3 Describe the patella, giving its muscular attachments. 4 Describe digestion as it takes place in the stomach under normal conditions. 5 Describe the conduction path followed by a motor impulse traveling from the cortex to the right hand. 6 Describe the function of the pancreas. 7 Give the uses of sulphide of calcium therapeutically, and the dose you would employ. 8 Give the therapeutic application of apomorphine. 9 Give a test for bile in the urine. 10 How could the absorption of the products of intestinal fermentation be demonstrated by an examination of the urine? 11 Give the symptoms of placenta praevia. 12 Give the treatment of a shoulder presentation. 13 Give the differential diagnosis between biliary and renal colic. 14 Give the symptoms of lead poisoning. 15 Give the symptoms and complications of scarlet fever. 16 Give the complications of typhoid fever. 17 De-

in this state? 8 How would you determine the difference between a dressed large dog and a dressed calf? 9 How can you detect the difference between the carcass of a well fed calf of three weeks of age and that of a poorly fed calf of five weeks of age? 10 Under what conditions, other than under age, would an inspector be authorized in seizing the carcass of a calf offered for sale?

2 *Experience.*— See page 15.

(f) Bee inspector. The duties of the position are to enforce the law for the extirpation of "foul brood" and other bee diseases.

	Subjects of examination	Relative weights
1	Questions on the law and duties	6
2	Experience	4
	Total	10

Inspector of nurseries, Department of Agriculture. Open to men only. Salary $100 per month, during the season. The duties of the position are the inspection of nurseries, orchards and nursery stock and the suppression of fruit tree diseases and pests, especially yellows, black-knot and San José scale. The questions in entomology, horticulture and botany will relate especially to the duties. Time allowed, six hours.

	Subjects of examination	Relative weights
1	Entomology	3
2	Horticulture	2
3	Botany	2
4	Experience and education	3
	Total	10

1 *Entomology.*— 1 Give the superficial characteristics of the San José scale in its various forms. 2 Describe the life history of the San José and give some idea of the specific characters of the female. 3 How should an orchard infested with San José scale be treated? 4 What relation exists between the structure of insects and the methods which should be employed in their control? Give examples illustrating your answer. 5 Outline a method of inspecting, stating what should be looked for, where and in what manner. 6 Describe briefly three of our common native scale insects. 7 What are the essentials in fumigating nursery stock? 8 Describe briefly the stages and places in which the following insects are found in winter: apple tree tent caterpillar, canker worms, forest tent caterpillar, bud moth, plant lice. 9 Name five insecticides and state how and for what each should be used. 10 Give a brief account of ten insects which injure fruits in this state.

2 *Horticulture.*— 1 Describe the preparation of three fungicides and state the use of each. 2 Give general directions for the spraying of an orchard. 3 Describe the principal modes of plant propagation. 4 Describe a good

method of storing nursery trees in winter. 5 What treatment would you advise to prevent peach leaf-curl? 6 Mention the causes which prevent fruit from setting. 7 Name the most common vineyard diseases.

3 *Botany.*— 1 What is meant by "fungous diseases?" 2 What fungi have been destructive in the orchards and nurseries of this state? 3 Give an account of black knot and its treatment. 4 What causes galls on the roots of nursery stock, what trees and shrubs are affected and what remedies would you suggest? 5 Give the cause of peach yellows. What remedy would you advise for this disease? 6 What are the functions of the leaves of a plant? 7 Describe pollination and fertilization in flowers. 8 Give an outline of the classification of the principal fruit trees and shrubs of this state.

4 *Experience and education.*— See page 15.

Physician, fourth and fifth grades. Open to both sexes. Salary usually $600 and maintenance. Applicants must be licensed medical practitioners of this state. This list is intended to provide eligibles for the position of medical interne in the state hospitals and for positions of similar grade in other state and county institutions. No examination is required, but the names of qualified applicants will be entered upon the eligible list from time to time as their applications are received with the rating obtained in the state examination for license to practice as certified by the examiners of the University of the State of New York. Separate lists will be maintained for the schools of medicine recognized by the University. Persons licensed to practice prior to the requirement of examination by the State Board will be examined by the Commission.

Physician, sixth grade. Open to men only. Salaries $900 to $1200, usually with maintenance. This examination is intended to provide eligibles for the position of junior physician in the state hospitals and for positions of similar grade in other institutions. Applicants must be licensed practitioners and have at least one year's actual experience on the medical staff of a public general hospital or have served at least one continuous year as medical interne in a state hospital for the insane. Subjects of examination: anatomy, physiology, materia medica and therapeutics, chemistry, obstetrics, theory and practice, surgery. Time allowed, six hours.

Specimen questions

1 Give the minute anatomy of the spleen. 2 Locate the Island of Reil. 3 Describe the patella, giving its muscular attachments. 4 Describe digestion as it takes place in the stomach under normal conditions. 5 Describe the conduction path followed by a motor impulse traveling from the cortex to the right hand. 6 Describe the function of the pancreas. 7 Give the uses of sulphide of calcium therapeutically, and the dose you would employ. 8 Give the therapeutic application of apomorphine. 9 Give a test for bile in the urine. 10 How could the absorption of the products of intestinal fermentation be demonstrated by an examination of the urine? 11 Give the symptoms of placenta praevia. 12 Give the treatment of a shoulder presentation. 13 Give the differential diagnosis between biliary and renal colic. 14 Give the symptoms of lead poisoning. 15 Give the symptoms and complications of scarlet fever. 16 Give the complications of typhoid fever. 17 De-

scribe Colles' fracture. 18 Describe the technique of Bassini's operation for hernia. 19 Give the treatment for hydrocele. 20 When is tracheotomy indicated?

Woman physician. Salaries usually $1000 to $1500 and maintenance. Applicants must be licensed medical practitioners of this state and have had at least one year's experience in a hospital or three years' experience in the general practice of medicine. Subjects of examination: anatomy, physiology, materia medica and therapeutics, chemistry, obstetrics, theory and practice, surgery. Time allowed, six hours.

Specimen questions

1 Give the gross anatomy and the anatomical relations of the uterus. 2 Describe the differences between the male and female pelvis. 3 Give the anatomical relations of the left lung. 4 Describe the physiology of menstruation. 5 Describe the means by which starches are assimilated in the body. 6 Locate the motor area in the brain. 7 Give a quantitative test for urea. 8 Give the symptoms of gastric cancer. 9 Give the symptoms, including physical signs, of acute bronchitis. 10 Differentiate locomotor ataxia from the conditions with which it may be confounded. 11 Write the following prescription in Latin without abbreviations: Take one-half a drachm of carbonate of ammonia, two ounces each of paregoric and syrup of squills and make a mixture. Label — A teaspoonful three times a day. 12 Have you any criticism of the above prescription to offer? 13 How would you differentiate between acute catarrhal bronchitis and croupous pneumonia? 14 Give the pathology and symptoms of acute poliomyelitis anterior in children. 15 Give the treatment for chorea. 16 Give the pathology of acute parenchymatous nephritis (acute exudative nephritis). 17 How would you control the hemorrhage from an incised wound of the palm of the hand? 18 Enumerate the conditions which would cause hemorrhage from a non-gravid uterus. 19 Give the varieties of salpingitis. 20 How would you treat fungoid degeneration of the endometrium? 21 What are the symptoms of puerperal mastitis?

Apothecary, state hospitals and institutions. Open to both sexes. Salaries $40 to $60 per month and maintenance. Applicants must be licensed pharmacists of the state of New York. The examination consists wholly of practical questions. Time allowed, six hours.

Specimen questions

1 What weights and measures are used in writing prescriptions? Give tables or outlines of each one. 2 What is the weight of one fluid ounce of water at 60 degrees temperature? Weight of one fluid ounce of alcohol, same temperature (s. g. of alcohol .820)? 3 When extract of dandelion is ordered in a prescription, should you use solid or fluid extract? 4 How much 10 per cent. solution of nitroglycerin should be used to make one pint of 1 per cent. alcoholic solution of the same? 5 What is the average dose of nitroglycerin, and how much of a 1 per cent. solution is equal to such dose? 6 What per cent. of crude drug do fluid extracts represent? What per cent. do tinctures

represent? 7 Define alkaloids, neutral principles; give two examples of each. 8 In making an oleate of an alkaloid, should the alkaloid be used or a salt of it? Give reason for your decision. 9 Define boiling point. Why is not the boiling point of all liquids the same? 10 What effect does the application of heat and cold have upon the bulk or volume of bodies? 11 Define an organic and an inorganic body, and give one example of each. 12 Do the laws of chemistry apply equally to organic and inorganic bodies? 13 Define incompatibility; give an example of it occurring in a prescription. Is it ever intended to occur in prescriptions? 14 Define the terms analytical, synthetical, qualitative and quantitative, as applied in chemistry. 15 Define deliquescent, efflorescent and volatile; give one example of each of such bodies. 16 Give explanation of the preparation of sol. citrate of magnesia, stating ingredients and chemical changes. 17 What are chemical and what physical properties? Give example of each with iron. 18 What is the composition and medical property of compound licorice powder? 19 What varieties of oil of almonds are official; give dose of each? 20 What are aloes, from what derived? Which is the best variety? 21 What varieties of senna are official; which is the best? 22 What is the common name of rhamnus purshiana; what part is used; what is its medicinal property? 23 What are the official preparations of rhubarb; what are its medicinal properties? 24 Belladonna; what are its medicinal properties, what parts are used; give dose of its alkaloid. 25 What is eucalyptol; what is oil of eucalyptus? 26 Give official name of oil of pennyroyal and oil of peppermint. 27 How does tincture of opium differ from deodorized tincture of opium? Give dose of each. 28 What is terpin hydrate, what its medicinal property, and dose? 29 How would you test tincture of aconite to ascertain its quality? 30 What is Lugol's solution? Give its official name. 31 What is a poison; what is an antidote? 32 What is a chemical, and what a physiological antidote? 33 From what and how is hydrated oxide of iron prepared? 34 Name two prompt and common emetics (not ipecac) with dose for use in cases of poisoning. 35 Give average adult dose of each of the following: Arsenic, strychnine, corrosive sublimate, atropine, aconite, digitalis, gelsemium, chloral hydrate, elaterin and cantharides. 36 Give dose of tr. aconite, tr. digitalis, tr. gelsemium and tr. cantharides.

Trained nurse. This examination covers the positions of nurse, head nurse, hospital matron, state hospital matron, and similar positions in state and county institutions. Salaries from $25 to $60 per month and maintenance. Appointments are most frequently made to the $25 positions, and there is excellent chance of appointment for those willing to accept such positions. Minimum age, twenty-one years. Open to men and women. Candidates must be graduates of a state or general hospital training school for nurses. Time allowed, six hours.

	Subjects of examination	Relative weights
1	Practical questions on nursing, preparation of medical and surgical supplies, etc.	7
2	Experience and education	3
	Total	10

Specimen questions

1 *Practical questions.*— 1 Tell what the average free ward should contain. 2 Of what should ward floors be made, and how taken care of? 3 How should a ward be disinfected? 4 What should be taken in consideration in making a choice of ward beds? 5 For whom are water and air beds used? 6 What amount of pure air should be supplied for each person per hour? 7 What should be the temperature of a ward or room which contains fever patients? Of one which contains patients having lung diseases? 8 Describe the forms of bath, their temperature, etc. 9 How do you make a five per cent. solution of carbolic acid? 10 How do you make a 1:1000 solution of corrosive sublimate? 11 What attention should be given evacuations from the bowels in typhoid fever and dysentery? 12 Of what are catheters generally made, and how are they made sterile? 13 What is the normal temperature of the human body? Its pulse rate? The rate of its respiration? 14 What is the rule for converting Fahrenheit degrees into those of Centigrade and Reaumur? 15 What is meant by surgical cleanliness? 16 How do you secure this condition? 17 What is a normal salt solution? 18 When is artificial respiration resorted to? 19 Name an emetic and tell for what it is used. 20 In what cases is a nurse justified in administering emetics without the advice of a physician?

2 *Experience.*— See page 15.

Pupil nurse, Erie County Hospital. Open to women only. Age limits, twenty-one and thirty-two years. Appointees receive a regular three years' course of instruction as nurses. After the first month they are paid $10 per month for eighteen months, and thereafter, $15 per month, with maintenance. The examination is usually held only at the hospital in Buffalo.

	Subjects of examination	Relative weights
1	Writing from dictation	2
2	Arithmetic (fundamental rules and fractions)	3
3	Letter writing	3
4	Penmanship	2
	Total	10

Steward, state hospitals and institutions. Open to men only. Salaries $1,200 to $2,000 and maintenance. Time allowed, six hours.

	Subjects of examination	Relative weights
1	Arithmetic and questions on the duties of the position	7
2	Experience	3
	Total	10

Library assistant. Salaries $30 to $50 per month. Open to both sexes. Time allowed, six hours.

Specimen questions

Cataloguing, subject indexing and classification.— 1 Would you enter Charles Dudley Warner's "American Men of Letters" under editor or title, and why? 2 Catalogue the first fifteen volumes of the "Annual Report of the Civil Service Commission of New York State." 3 Give form of entry for any periodical, such as Harper's New Monthly. 4 In what cases would you make title cards? 5 Give rule for the form of entry of "An English Nobleman." 6 How would you catalogue an anonymous book whose author had been found? 7 Give subject headings with "See" and "See also" reference for any six of the following books: Lamb, "Tales from Shakespeare;" George, "Progress and Poverty;" Davis, "Cuban and Porto Rican Campaigns;" Worcester, "Philippine Islands;" Nordau, "Degeneration;" Jameson, "Characteristics of Women;" Campbell, "Prisoners of Poverty;" Rousseau, "Emile." 8 Give class numbers for the following books: "Geology of Greenland;" Statistics of Births and Deaths in Berlin in 1894;" "Travels in Hungary;" "Life of Napoleon;" "Latin Grammar;" "Japanese Home Life;" "United States Colonial Expansion;" "Constitutional History of the United States;" "Literature of Holland;" "Elections in New York City;" "Gazetteers of Boston;" "Folk Tales of Scandinavia;" "List of Books on the Commerce of Ancient Rome."

Library economy, bibliography and handwriting.— 1 Outline a charging system desirable for a small public library. 2 How were the "Cutter Tables" formed and what is their use? 3 Give plan for the order department of a small public library. 4 Mention several books valuable for ready reference. 5 Do you approve of "open shelves," and why? 6 Do you favor a dictionary or classed catalogue, and why? 7 Mention the best aids for cataloguing American and English anonymous books. 8 Mention five good general bibliographies. 9 Mention two valuable bibliographies of scientific publications. 10 Mention one good bibliography each for English, American, German, French and Italian books. 11 Describe Graesse and Brunet. 12 Mention a good bibliography of early printed books. 13 Name bibliographies you would consult in making a list of books on American history. 14 Give a short sample of your ordinary handwriting and the library hand you have acquired.

Court stenographer. Salaries $1,500 to $2,500 per annum. Open to both sexes. Time allowed, six hours. Transcription must be done by candidate personally, either with pen and ink, or on the typewriter.

	Subjects of examination	Relative weights
1	Transcription of ordinary matter dictated at the rate of 175 words per minute for about 4 minutes	4
2	Transcription of ordinary matter dictated at the rate of 200 words per minute for about 3 minutes	6
3	Oral rendering from stenographic notes of questions and answers by different voices simulating the examination of a witness in court	5
4	Transcription of dictation, including terms commonly used in law, navigation, mechanics, the trades, etc	2
5	Questions on the duties of court stenographers	3
	Total	20

Specimen questions

1, 2, 3, 4. The passages for speed dictation will be selected from a judge's charge. The passages for oral rendering and for technical terms will be taken from actual testimony. The passage used for oral rendering will also be transcribed for the purpose of a record of the examination.

5 ***Questions on the duties.***— 1 John Gilpin was indicted for murder in the first degree for killing Peter Jones and placed on trial Jan. 2, 1899, before Justice Chas. N. Truax in the Supreme Court, Part I, New York county. The people were represented by James W. Osborne, assistant district attorney, and the defendant by Abram Peters, attorney. After securing a jury Alfred Edwards took the stand as the first witness for the people. From the above statement write out in proper form the stenographic record of trial to and including the calling of the first witness, omitting the examination of the jurors. 2 What is the provision of the code in regard to the size and binding of paper on which the transcript shall be made? 3 How long does the law require the stenographic notes to be preserved? What is done with the notes of an official stenographer who goes out of office? 4 What is the rule in regard to the record of rulings or decisions of the presiding magistrate? 5 Who are entitled to copies of the record, and upon what terms? 6 State fully and in order what the record of a trial should contain. 7 What is the rule in regard to noting exceptions? 8 How should a stenographer treat the verbal, grammatical and other inaccuracies on the part of those conducting the trial? 9 Describe the treatment and record to be made of exhibits, documentary and otherwise. 10 Describe, in detail, your experience as a stenographer in court or elsewhere in taking of testimony. 11 Have you ever held a position as official stenographer? 12 Have you left such position? If so, state the reason.

Regents' Examiner. Original salaries usually $600 to $900. Open to both sexes. Minimum age, twenty-one years. Candidates must be graduates of a high school or have an equivalent education, according to the standard of the Regents. Competitors must choose and qualify in one or more of the following groups of subjects, and specify in the application the group or groups for which they desire to be examined. Time allowed for each group, six hours.

Group
1 English language and literature
2 Spanish language and literature
3 German language and literature
4 French language and literature
5 Latin language and literature
6 Greek language and literature
7 Mathematics (arithmetic, algebra, geometry and plane trigonometry)
8 Physics and chemistry
9 Astronomy, physical geography and geology
10 Botany, zoology and physiology and hygiene
12 History of United States and New York, civics and economics
13 Modern European and ancient history
15 Drawing

Specimen questions

Group 1 *English language and literature.*— When a choice is allowed the candidate in any of the following questions, if more than one answer is given *only the first* answer written will be considered. 1 Discuss the method in which each of the following topic sentences should be developed into a paragraph and the arrangement of the sentences within the paragraph: (a) I visited to-day an ideal school house. (b) The good, it is said, die young. 2 (a) Mention and illustrate the different methods of forming an interrogative sentence in English. (b) What kinds of subordinate clauses may be introduced by interrogative words? Illustrate. 3 Criticize in detail the following paragraph. Specify the chief fault and minor errors, give technical names of errors as far as you are able. "After a long and toilsome ascent we reached the summit of the hill, where we obtained, a magnificent view of a lovely fertile smiling valley dotted here and there with the white residences of farmers tastily surrounded with maples, and just below where we stood ran a swift stream on which stood a large mill, turned by an old-fashioned water-wheel, one of the kind that can afford to utilize only a small quantity of the water-power because there is such abundance of power already running to waste." 4 Rewrite the paragraph correcting the faults you have criticized.

5 "In the afternoon they came unto a land
In which it seemed always afternoon
All round the coast the languid air did swoon,
Breathing like one that hath a weary dream.
Full-faced above the valley stood the moon;
And *like* a downward smoke, the slender stream
Along the cliff to fall and *pause* and fall did seem."

Underline the figurative expressions in the above quotation and in regard to each explain: (a) What idea the poet intended to illustrate by the figure, (b) In what the point of the comparison lies. 6 Give the syntax of the words italicized on question paper in the quotation given in number 5. 7 (a) Mention three requirements of good diction. (b) Give two rules to be observed in narration not applicable to other forms of composition. 8 Explain the meaning of the following expressions and the effect of each upon an author's style: (a) "fine writing;" (b) idiomatic expressions; (c) periodic sentence; (d) anti-climax; (e) epithet. 9 Write the scansion of the following lines and give the prevailing foot and meter of each selection: (a) First two lines of the quotation in number 5.

(b) Meanwhile the choleric captain strode wrathful away to the council.

(c) And the night shall be filled with music
And the cares that infest the day
Shall fold their tents like the Arabs
And as silently steal away.

10 Make an outline for an essay on one of the following topics, and write the introductory paragraph of the essay you outline: (a) Life on a farm: (b) Poetry written for children. 11 Select *one* of the following poems and give the author and time when the poem was written, the real subject or purpose of the poem, the plan of the poem (a) The Deserted Village; (b) Lycidas; (c) Sohrab and Rustum. 12 Discuss *one* of the following: (write about 150 words) (a) Ruskin as a master of prose; (b) The use of mythol-

ogy in literature. 13 (a) Give four distinct arguments in favor of the study of the masterpieces of literature in secondary schools aside from the pleasure afforded to the student. (b) What is the chief object in the study of the history of literature? 14 Contrast the fiction of the past decade with that written 50 years ago, discussing (a) difference in style; (b) difference in motive. 15 Mention four *famous* translators of well-known classics, two English and two American, and discuss the most important translation of each. 16 Mention the author of *each* of the following and comment on the form in which each is written and the literary value of each: (a) The Cloud; (b) Pamela, or Virtue Rewarded; (c) Lives of the Hunted; (d) Layamon's "Brut"; (e) Vision of Sir Launfal. 17 Describe the friendship of Coleridge and Lamb and its effect upon the works of either or both; *or*, Show how the character and life of Charles Dickens are reflected in his works. 18 Name the author of each of the following addresses and outline the circumstances under which each was delivered: (a) Gettysburg Address; (b) Conciliation with America; (c) First Bunker Hill Oration; (d) Commemoration Ode. 19 Give four characteristics of the poetry of *either* Tennyson *or* Wordsworth and cite, by quotation if possible, passages to illustrate such characteristics. 20 To what age or period does Pope belong? Mention two prominent contemporaries of Pope. Show the historical situation and its influence upon the literature of the time.

Group 3 German language and literature.— 1 Translate into English: (a) Aber das gnädige Fräulein wollte von dieser Ausnutzung ihres geliebten Parkes eben so wenig wissen, wie der Vater, wenn auch vielleicht aus einem anderen Grunde. Es wurde nicht sowohl ihren Stolz, als ihren poetischen Sinn verletzt haben, wenn man die alten Eichen und Buchen, über deren Wipfel sie so oft voller Entzücken die weissen Sommerwolken hatte hinsegeln sehen, umgehauen und zur Erde gebracht hätte. Dass hier Alles so blieb, wie es nun einmal war, und keine andere Hand, als die linde allmächtige Hand der Natur ihr Waldheiligtum berührte — diese Gewissheit gehörte zu den Requisiten der poetischen Welt, in welcher sich die junge Dame um so lieber und um so freier bewegte, je weniger sie — wenigstens in den letzten Jahren — von der wirklichen Welt zu sehen und zu hören bekam. (Roschen vom Hofe, Spielhagen.) (b) Egmont (im Begriff aufzufahren, nimmt sich zusammen, und spricht nach einer kleinen Pause gesetzt).— Nicht jede Absicht ist offenbar, und manches Mannes Absicht ist zu missdeuten. Muss man doch auch von allen Seiten hören, es sei des Königs Absicht weniger, die Provinzen nach einförmigen und klaren Gesetzen zu regieren, die Majestät der Religion zu sichern und einen allgemeinen Frieden seinem Volke zu geben, als vielmehr sie unbedingt zu unterjochen, sie ihrer alten Rechte zu berauben, sich Meister von ihren Besitztümern zu machen, die schönen Rechte des Adels einzuschränken, um derentwillen der Edle allein ihm dienen, ihm Leib und Leben widmen mag. Die Religion, sagt man, sei nur ein prächtiger Teppich, hinter dem man jeden gefährlichen Anschlag nur desto leichter ausdenkt. Das Volk liegt auf den Knieen, betet die heiligen gewirkten Zeichen an, und hinten lauscht der Vogelsteller, der sie berücken will. (Egmont, Goethe.)

(c) So bist du schon im Hafen, alter Mann?
Ich nicht. Es treibt der ungeschwächte Mut
Nicht frisch und herrlich auf der Lebenswoge,
Die Hoffnung nenn' ich meine Göttin noch,
Ein Jüngling ist der Geist, und seh, ich mich,
Dir gegenüber, ja, so möcht' ich rühmend sagen,
Dass über meinem braunen Scheitelhaar
Die schnellen Jahre machtlos hingegangen.
Wer nennt das Glück noch falsch? Mir war es treu,
Hob aus der Menschen Reihen mich heraus
Mit Liebe, durch des Lebens Stufen mich
Mit kraftvoll leichten Götterarmen tragend.

(Wallensteins Tod, Schiller.)

2 Translate into German: In all this time of doubt and fear one man was calm and hopeful — the great commander. Columbus knew well what the sailors were plotting, but he kept steadily on his course. And his faith was soon to be rewarded. For now, when the fleet had been out a month, real signs of land began to be seen. 3 Write original German sentences containing the following: separable verb, preposition governing the genitive, *auf* with the accusative, impersonal verb, superlative with *am*. 4 Rewrite the following sentences, changing the voice, not the tense, of the verbs and making the other necessary changes: (a) Rose hatte ihres Vaters Arm genommen. (b) Ich habe es mit wahrhaftem Schmerz bemerkt. (c) Abermals wird die Leiter angelegt. (d) Wenn ich von meinen Feinden gehasst würde, so würde ich sie nicht hassen. (e) Ich vergesse Niemand leicht, den ich einmal gesehen und gesprochen habe. 5 Translate the following sentences: (a) Man kann nicht dahinter kommen. (b) Das hat nichts zu sagen. (c) Es ist mir um so lieber. (d) Was halten Sie davon? (e) Das geht Sie nichts an. 6 Write in German a sketch, containing not less than one hundred words, of the life and character of Goethe.

Group 4 *French language and literature.*— 1 (a) What French works have you read? Where and under whom have you studied French? Do you speak French? (b) What objects of instruction are most important in first year French? In second year French? What should the pupil who has been well taught know at the close of two years' study of French? 2–3 Make both a literal and a literary translation of the following passage. Comment upon the two from the instructor's point of view. "Qui n'a pas vu Avignon du temps des Papes, n'a rien vu. Pour la gaieté, la vie, l'animation, le train des fêtes, jamais une ville pareille. C'était du matin au soir processions, pelerinages, les rues jonchées de fleurs, tapissées de hautes lices, des arrivages de cardinaux par le Rhône, bannières au vent, galères pavoisées, les soldats du Pape qui chantaient du latin sur les places, les crécelles des frères quêteurs; puis, du haut en bas des maisons qui se pressaient en bourdonnant autour du grand palais papal comme des abeilles autour de leur ruche, c'était encore le tictac des métiers à dentelles, le va-et-vient des navettes tissant l'or des chasubles, des petits marteaux des ciseleurs de burette, les tables d'harmonie qu'on ajustait chez les luthiers, les cantiques des ourdisseuses; par là-dessous le bruit des cloches, et toujours quelque tambourins qu'on entendait ronfler, là-bas, du côté du pont. Car chez vous,

quand le peuple est content, il faut qu'il danse, il faut qu'il danse; et comme en ce temps-là les rues de la ville étaient trop étroites pour la farandole, fifres et tambourins se postaient sur le pont d'Avignon, au vent frais du Rhône, et jour et nuit l'on y dansait, l'on y dansait.....Ah! l'heureux temps! l'heureuse ville! Des hallebardes qui ne coupaient pas; des prisons d'Etat où l'on mettait le vin à refraîchir. Jamais de disette, jamais de guerre! Voila comment les Papes du Comtat savaient gouverner leur peuple; voila pourquoi leur peuple les a tant regrettés!" 4 Write in French: (a) A courageous man; a kind, good man. (b) That rope is thirty feet long. (c) The cat seems to think only of itself. (d) It is this man who is most faithful. (e) Whom do you want? (f) When one is in a country it is necessary to follow its customs. 5 Give the principal parts, including all participles, of the French verbs for *absolve, go, know, be necessary, will (be willing)*. 6 Give twenty French words derived from Latin, giving also the Latin word and its meaning; *or*, Give as many idioms as you know for the use of any forms of *avoir, tenir, prendre*. 7 Write in French: (a) I could have won that victory if heaven had not willed to deprive me of the glory of it. (b) The inhabitants had abandoned the city before the enemy entered it. (c) Let him choose, if he will, France or Mexico. (d) Do not hope then any longer that any one will come to your aid. (e) Can it be denied that good morals are essential to the permanence of states? 8 Explain and illustrate the partitive construction: When is the article used in French when it would not be used in English? Give the different meanings, according to use, of *personne, rien, aucun, tout, tel, même, autre*. 9 Translate: "Amiel avait une habitude sans laquelle sa trace se serait probablement effacée assez vite dans les mémoires. Il confiait presque journellement au papier ses idées, ses agitations, ses plaintes. Là, comme dans un sanctuaire secret, il interrogeait sa conscience, se replacait en face des énigmes de la vie, se retrempait dans la méditation du devoir et dans la contemplation de l'infini. Exercice dangereux en ce qu'il risque d'exaspérer les tourments d'un esprit déjà porté à se replier sur lui-même, mais exercice qui sert quelquefois aussi à rétablir l'équilibre dans une âme en la forçant de ramener les choses à leur just mésure. Il y a de l'apaisement dans une confession faite la plume à la main; nous nous séparons de notre infortune en livrant au papier les griefs que nous avons contre le sort et contre nousmêmes. Amiel est resté fidèle à l'habitude dont je parle jusqu' aux derniers jours de sa vie, et il nous a laissé ainsi, avec la preuve d'un don supérieur a tout ce que nous avions soupçonné en lui, les ressources les plus précieuses pour l'histoire de sa pensée. Ce sera l'un des faits curieux de l'histoire litteraire que la différence entre ce que l'on connaissait de notre ami et ce que l'on va savoir de lui. On l'avait cru stérile, et il est inépuisable; on lui avait reproché de perdre son temps à des jeux d'esprit, et l'on découvre chez lui une profondeur extraordinaire d'idées et de sentiments; on souffrait, dans sa manière d'écrire d'une sorte d'afféterie, et la forme ici devient large et parfois magnifique, mettant dans la philosophie tout ce que l'émotion personnelle peut lui communiquer d'eloquence. L'aisance et la force ont remplacé la recherche." (*Edmond Scherer.*) 10 Give as many uses of the infinitive as you can and write a short sentence in French to illustrate each. 11 What types of French literature were important in the 11th, 12th and 13th centuries? Describe the types you mention and name several works which are examples of each. 12 Give a brief

account of the characteristics of two French novelists and one poet of the present century; *or*, How does the criticism of Sainte-Beuve differ from that of earlier critics? 13 What do you understand by the classical drama in France? What were its limitations? Name *three* great dramatists of this school.

Group 5 Latin language and literature.— 1 Translate into English: (a) Quod si haec vox, huius hortatu praeceptisque conformata non nullis aliquando saluti fruit, a quo id accepimus quo ceteris opitulari alios servare possemus, huic profecto ipsi, quantum est situm in nobis, et opem et salutem ferre debemus. Ac ne quis a nobis hoc ita dici forte miretur, quod alia quaedam in hoc facultas sit ingenii neque haec dicendi ratio aut disciplina, ne nos quidem huic uni studio penitus umquam dediti fuimus. Etenim omnes artes, quae ad humanitatem pertinent, habent quoddam commune vinculum et quasi cognatione quadam inter se continentur.— (*Cicero, Pro Archia.*)

(b) Fas omne est, Cytherea, meis te fidere regnis,
Unde genus ducis. Merui quoque; saepe furores
Compressi et rabiem tantam caelique marisque.
Nec minor in terris, Xanthum Simoentaque testor,
Aeneae mihi cura tui. Cum Troia Achilles
Exanimata sequens inpingeret agmina muris,
Milia multa daret leto, gemerentque repleti
Amnes, nec reperire viam atque evolvere posset
In mare se Xanthus, Pelidae tunc ego forti
Congressum Aenean nec dis nec viribus aequis
Nube cava rapui, cuperem cum vertere ab imo
Structa meis manibus periurae moenia Troiae.
— (*Virgil, Aeneid, Bk.* 5.)

(c) Quid enim est, per deos, optabilius sapientia, quid praestantius, quid homini melius, quid homine dignius? Hanc igitur qui expetunt philosophi nominantur, nec quidquam aliud est philosophia, si interpretari velis, praeter studium sapientiae. Sapientia autem est, uta veteribus philosophis definitum est, rerum divinarum et humanarum causarumque, quibus eae res continentur, scientia, cuius studium qui vituperat haud sane intellego quidnam sit quod laudandum putet.— (*Cicero, De Officiis.*) 2 Translate into Latin: (a) Let them see to it that they do not make this man their enemy. (b) It is difficult to say what is the opinion of the people regarding it. (c) He announced to his forces that they would set out for Rome on the 24th of September. (d) Who in this assembly is so foolish as to believe it? (e) Do not entrust the care of your affairs to him unless you have confidence in him. 3 Explain and illustrate the use of the Latin gerundive instead of the gerund with an object. Explain the use of the subjunctive mode in relative clauses. 4 Mention two poetic uses of the accusative; of the dative; of the infinitive. Give the constructions used with comparatives. 5 Write notes on the syntax of the italic words in the following: Numquam igitur laudari satis digne philosophia poterit, cui qui *pareat* omne tempus aetatis sine molestia possit degere; Apud quem Laelium at Scipionem facimus admirantis, quod is tam facile senectutem *ferat;* Ceteri senes, Fabricii, Curii, Coruncanii, cum rem publicam consilio et auctoritate *defendebant*, nihil agebant? Tu *velim* a me animum

parumper *avertas;* Propterea quasi cognomen iam habebat in senectute *sapientis.*

Group 6 *Greek language and literature.*— 1 Translate into English:

(a) *Πῶς ἂν οὖν ἔχοντες τοσούτους πόρους πρὸς τὸ ὑμῖν πολεμεῖν, καὶ τούτων μηδένα ἡμῖν ἐπικίνδυνον, ἔπειτα ἐκ τούτων πάντων τοῦτον ἂν τὸν τρόπον ἐξελυίμεθα ὃς μόνος μὲν πρὸς θεῶν ἀσεβής, μόνος δὲ πρὸς ἀνθρώπων αἰσχρός; Παντάπασι δὲ ἀπόρων ἐστὶ καὶ ἀμηχάνων καὶ ἀνάγκῃ ἐχομένων, καὶ τούτων τοιῶνδε, οἵτινες ἐθέλουσι δι' ἐπιορκίας τε πρὸς θεοὺς καὶ ἀπιστίας πρὸς ἀνθρώπους πράττειν τι. Οὐχ οὕτως ἡμεῖς, ὦ Κλέαρχε, οὔτε ἠλίθιοι οὔτε ἀλόγιστοί ἐσμεν. Ἀλλὰ τί δὴ ὑμᾶς ἐξὸν ἀπολέσαι οὐκ ἐπὶ τοῦτο ἤλθομεν; Καὶ ἴσθι ὅτι ὁ ἐμὸς ἔρως τούτου αἴτιος, τὸ τοῖς Ἕλλησιν ἐμὲ πιστὸν γενέσθαι, καὶ ᾧ Κῦρος ἀνέβη ξενικῷ διὰ μισθοδοσίας πιστεύων, τούτῳ ἐμὲ καταβῆναι δι' εὐεργεσίας ἰσχυρόν. Ὅσα δέ μοι ὑμεῖς χρήσιμοι ἐστε, τὰ μὲν καὶ σὺ εἶπας, τὸ δὲ μέγιστον ἐγὼ οἶδα· τὴν μὲν γὰρ ἐπὶ τῇ κεφαλῇ τιάραν βασιλεῖ μόνῳ ἔξεστιν ὀρθὴν ἔχειν, τὴν δ' ἐπὶ τῇ καρδίᾳ ἴσως ἂν ὑμῶν παρόντων καὶ ἕτερος εὐπετῶς ἔχοι.* — Xen. Anab. Book II, chap. 5, 20. (b) *Ἐπειδὴ δὲ ὁστέρα ἡμέρα ἐγένετο τῆς εἰς ταυτὸν συνόδου, ἐπ' ἐξόδῳ ἐθύετο Ξενοφῶντι· ἀνάγκη γὰρ ἦν ἐπὶ τὰ ἐπιτήδεια ἐξάγειν· ἐπενόει δὲ καὶ τοὺς νεκροὺς θάπτειν. Ἐπεὶ δὲ τὰ ἱερὰ ἐγένετο, ἵπτοντο καὶ οἱ Ἀρκάδες, καὶ τοὺς νεκροὺς τοὺς μὲν πλείστους ἔνθαπερ ἔπεσον ἕκάστους ἔθαψαν· ἤδη γὰρ ἦσαν πεμπταῖοι καὶ οὐχ οἷόν τε ἀναιρεῖν ἔτι ἦν· ἐνίους δὲ τοὺς ἐκ τῶν ὁδῶν συνενεγκόντες ἔθαψαν ἐκ τῶν ὑπαρχόντων ὡς ἐδύναντο κάλλιστα· οὓς δὲ μὴ εὗρισκον, κενοτάφιον αὐτοῖς ἐποίησαν μέγα, καὶ στεφάνους ἐπέθεσαν.*— Xen. Anab. Book VI, chap. 4, 9. 2 Give the syntax of *τρόπον*, *ἐξελοίμεθα*, *ἀπόρων*, *ἐξὸν*, *ἔχοι* (a); *συνόδου* (b). 3 Where formed and from what verbs are *ἀπολέσαι*, *εἶπας* (a); *συνενεγκόντες*, *ἐπέθεσαν* (b)? 4 Compare *αἰσχρός* (a); *μέγα* (b). Conjugate *ἐστὶ* in the imperfect; *οἶδα* in the perfect indicative. 5 Write Greek sentences, not found in the above passages, illustrating: (a) Purpose clause (three distinct types), (b) Past contrary-to-fact condition, (c) Impersonal use of verbal in *-τέος* with expression of agent, (d) Relative condition, future less vivid. 6 State three distinct uses of the adverb *μὴ*. 7 Translate into Greek: He replied that he heard that Abrocomas a hostile man was at the Euphrates river, twelve stages distant; he said that he wished to go to him. "If he shall be there," he said, "it is necessary to inflict punishment on him; but if he shall flee we will take counsel there in respect to these things." 8 Relate the story of Achilles as told in the Iliad.

Group 7 *Mathematics.*— 1 Find one-seventh of 1 acre 6 sq. rds. 4 sq. ft. 2 A certain bill of goods was marked at 25 per cent above cost. They were sold at trade discounts of 10% and 5%, and $58.50 was paid. What was the profit? 3 The diameter of the base of a right cylinder is 24 centimeters and the height is 64 centimeters. Find the volume of the cylinder and express the result in cubic meters. 4 Find the square root of 1034.2656, and explain the rule used. 5 Define and give examples: affected quadratic equation, surd, exponential equation, an incommensurable number, simultaneous equations. 6 Factor $x^5 + x^3y - x^2y^6 - y^7$ and $x^4 + 10x^2 - 2x^2y + y^2 - 10y + 25$. 7 Solve the equation: $4x^2 - 4\sqrt{4x^2 + 13} = 8$. 8 Find the logarithm of .81 to the base .8, given $\log_{10} 2 = .30103$; $\log_{10} 3 = .47712$. 9 Find the roots of the equation, $x^4 - 16x^2 - 9x + 36 = 0$. 10 Define: straight line, plane surface, tetrahedron, sector of a sphere, right cone. 11 Find the locus of the middle points of all secants that can be drawn to a given circumference from a fixed point

without it. Prove your construction. 12 In terms of the radius of the circumscribed circle and a side of a regular polygon, derive an expression for the length of a side of a regular polygon of the same radius and double the number of sides. 13 Find the volume of a regular pyramid whose lateral edge is 12 feet and whose base is an equilateral triangle inscribed in a circle of radius 10 feet. 14 The volume of a sphere is equal to the product of the area of its surface by one-third its radius. Demonstrate. 15 Prove the relation: $\cos A + \cos B = 2 \cos \frac{1}{2}(A + B) \cos \frac{1}{2}(A - B)$. 16 Write down the necessary formulae, and then solve this triangle, given two sides 40 and 60 yards and the included angle 100 degrees.

Group 8 *Physics and chemistry.*— 1 How much ice at 0° C. must be dissolved in a litre of water at 25° C. in order to reduce its temperature to 5° C.? 2 A stone is dropped into a dark mine by a person at the top, who hears six seconds later the sound made by the stone striking the bottom. How deep is the mine? 3 If the middle C on a piano gives 528 vibrations, how many vibrations should be given by the G above? Why is it impossible to put a piano into perfect tune? 4 Explain, using a diagram, why an object appears magnified under a single lens. 5 Explain or define the terms: (a) potential; (b) electrolysis; (c) cathode; (d) electromagnetic unit; (e) isogonic lines; (f) lines of magnetic force; (g) polarization of a cell; (h) hysteresis; (i) galvanoscope; (j) watt. 6 State and explain Mendeleef's Periodic Law. Of what service has it been to the advancement of chemical research? 7 Describe the blow pipe flames, both reducing and oxidizing; how is each produced and for what is each used? 8 Describe the process of producing iron from its ores, explaining the chemical reactions that occur. What properties are given iron by addition of (a) manganese; (b) carbon; (c) sulphur? 9 How much, by weight, of carbon dioxide can be made from ten pounds of pure chalk? Given the following atomic weights: Ca = 40, C = 12, O = 16, S = 32. 10 In the qualitative chemical analysis of a substance, other than a metal or alloy, a preliminary test may be made with concentrated sulphuric acid. What would be the characteristic results given by the following classes of compounds: (Answer any *five*) (a) acetates; (b) bromides; (c) chlorates; (d) fluorides; (e) iodides; (f) nitrates; (g) sulphides; (h) sulphites?

Group 9 *Astronomy, physical geography and geology.*— 1 Explain the method of determining the position of a star by declination and right ascension. 2 Explain (a) how the probable composition of the sun and other celestial bodies is determined; (b) how the velocity with which heavenly bodies are approaching or receding from the earth is determined. 3 Describe and explain the occurrence of solar and lunar eclipses. How often do they occur? What important observations can be made at the time of an eclipse? 4 Describe the planet Jupiter, paying particular attention to the following points: (a) diameter, density and distance from the earth; (b) length of its year; (c) satellites; (d) appearance through a telescope and probable physical condition. 5 Describe the constellation Orion. What are the most interesting objects in this constellation to be seen with a small telescope? 6 Describe five modes of island formation. 7 (a) What is the cause of winds?

(b) Account for the direction of the trade winds. (c) Mention five beneficial effects of winds. 8 Upon what does the climate of a place depend? Account for the climate of each of the following places: San Francisco, Newfoundland, London, Desert of Sahara. 9 Give the nebular hypothesis. 10 (a) Describe the development of a river valley. (b) Describe two modes of lake formation. 11 Discuss the influence of life in changing the surface of the earth. 12 Describe two modes of mountain formation. 13 Discuss the geological evidences of evolution. 14 Explain the following: earthquakes, artesian wells, geysers, coal formations. 15 Mention three principal kinds of building stone and explain the formation of each.

Group 10 *Botany, zoology and physiology and hygiene.*—1 Define five of the following terms: inflorescence, embryo, archegonium, ecology, prothallium, tissue, histology. 2 Make a drawing of a characteristic plant-cell; name the various parts and explain how the cell grows and reproduces. 3 Explain in detail the processes involved in the formation of the potato tuber. 4 Discuss the significance of the terms *species* and *genus*. 5 Give the life history of a moss plant. 6 Describe by aid of a drawing the nervous system of the earthworm. 7 Name and give the distinguishing characteristics of four orders of insects. 8 Describe the circulatory system of the haddock. 9 Sketch and describe type forms of the two principal classes of protozoa. 10 Give two examples of alternation of generations in the animal kingdom. 11 Name and trace five pairs of cranial nerves. 12 Explain the processes involved in the production of energy in the body. 13 Discuss the effect of physical exercise on (a) the muscles; (b) the nervous system; (c) the digestive organs. 14 Discuss the theory of vaccination. 15 Describe the circulation of the blood.

Group 12 *History of New York and the United States, civics and economics.*—1 (a) What was the great problem of the latter half of the 15th century? (b) What events rendered the solution of this problem necessary? (c) What portion of the American Continent was first called "America?" (d) What European nation secured possession of the portion so called? By what right or authority was such possession acquired? 2 (a) Which American Colony is regarded as the home of constitutional government? (b) Which, as the home of religious liberty? (c) Distinguish between Pilgrim and Puritan? (d) Which left the stronger impress on New England history? (e) Give reasons for your answer. 3 (a) What was the leading cause of the Revolutionary war? (b) What was the ground of American resistance prior to July 4, 1776? (c) Distinguish between rebellion and revolution. (d) When and where was the first American flag raised? (e) In what respect did the first flag differ from the present one? 4 Give your understanding of the respective functions of the state and national governments. 5 Briefly sketch the services of the U. S. navy rendered in time of war to the present time. 6 Discuss the election of president with reference to: (a) The intention of the makers of the Constitution; (b) The election of 1800; (c) The 12th amendment; (d) eligibility of candidates; (e) methods of nominating candidates. 7 Discuss the subject, "Slavery in the United States" with reference to: (a) the value of slave labor; (b) the importation of slaves; (c) the admission of states; (d) slavery as a cause of the Rebellion; (e) the abolition of slavery in the United States. 8 Discuss modern inventions as affecting, (a) the governing of

a nation; (b) the building of large cities; (c) the price of food products; (d) the cost of manufactured goods; (e) general intelligence. 9 Mention, giving the date of adoption, the different constitutions of the state of New York and mention one change made by each constitution. What was the origin of the common school fund of New York? Name the four oldest cities of the state. 10 Name five men in New York State prominent as journalists and the journals with which they were connected: five men of political prominence prior to 1860. 11 Give an account of the writings of (a) Adam Smith; (b) Henry George. 12 Discuss the circumstances which determine the rate of interest. 13 State two leading theories of rent. 14 Define the following terms: seignorage, entrepreneur, balance of trade, division of labor. 15 Discuss the following proposition: "The true unit in the comparison of wages is the family." 16 Give an account of the causes which produced the panic of 1873. How could this panic have been averted? 17 Name and describe the various kinds of money in use in the United States. State how each of these is kept on par with gold. 18 Discuss the economic effects of war. Why is a country usually prosperous in time of war? 19 Do the rich by indulging in luxuries benefit the laboring classes? Demonstrate your answer. 20 Discuss "trusts" from the economic standpoint.

Group 13 *Modern European and ancient history.*— 1 Sketch briefly the contests for supremacy between Greece and Persia. Give your estimate of the result of these contests upon the world's history. 2 Sketch the Athens of the age of Pericles with special reference to (a) the form of government; (b) the status of citizenship; (c) the policy of colonization; (d) public works. 3 Contrast the states of Sparta and Athens. What were the causes of the Peloponnesian war? How long did the war continue, and what were its results? 4 Discuss social life in Greece with reference to (a) education; (b) the position of women; (c) amusements; (d) slavery. 5 Give an account of the subjugation of Greece by Rome, noting causes, principal stages and results. 6 Compare Rome and Carthage before the first Punic war. How long did these wars continue? Describe the campaign of Hannibal and the origin of the "Fabian" policy. 7 Discuss the public land question and the reforms of the Gracchi. 8 Contrast the characters of Caesar and Pompey. What was the immediate cause of the civil war between these generals? State the result. 9 What is regarded as the "golden age" of Rome? Give reasons for your answer. What were the real causes of the decline and fall of the Roman empire? 10 What was the influence of Greek culture upon Rome? What most important legacy has Rome left to modern civilization? 11 Give a sketch of Alfred the Great, touching upon (a) his descent and character; (b) his wars; (c) the terms of the treaty by which these wars were concluded; (d) his scholarship; (e) his naval successes. 12 Sketch the rise of the Norman power. State the policy of William the Conqueror as regards (a) the granting of estates in England; (b) his dealing with assassinations. (c) What was the Great Survey? (d) What the Great Meeting of 1086? 13 Sketch the rise of English commerce. Wherein was English commerce a cause of bringing on the Hundred Years' War? What were the effects of this war upon the English people? Upon the people of France? 14 Carlyle in speaking of the use of gunpowder in war says "It made all men of the same height." Explain fully. 15 Sketch the reign of

Elizabeth, giving special attention to (a) her position on religious questions; (b) the prosperity and growth of the nation during her reign; (c) learning and letters; (d) how the common people lived. 16 What English monarch was the first to advocate the doctrine of "The divine right of kings?" What was the immediate cause of the revolution of 1688? Give a brief account of that revolution. 17 What was meant by "The third estate?" What French ruler was called the father of his people? Give a brief sketch of Catherine de Medici. 18 Sketch the war of the Spanish Succession with special reference to the following: (a) causes; (b) nations involved and commanders; (c) battles of this war; (d) what event terminated the war? (e) terms of settlement. 19 What is meant by the Code Napoleon and what has been its influence? What was the general and what the direct cause of the Franco-Prussian war? 20 Contrast the governments of France and England down to the time of Louis XVI. Show that a great revolution was the logical result in one country and not in the other.

Group 15 *Drawing.*— These questions afford opportunity to show more or less knowledge, skill and imagination. Graphic answers are preferred to verbal. Any medium may be used, as pencil, water color or clay. Every sketch should be in itself pictorial and decorative as well as representative; this may be attained by artistic handling and placing on the paper. 1–2 Draw in bold outline from memory or nature some flower and leaf form, and use this as material for architectural ornament to fill a tympanum four inches in diameter. 3 Draw a border in the Greek style introducing the Anthemion, and color, or indicate what was the historic coloring. 4 Make from memory or object a free-hand sketch for working drawings of a hand-wrench, such as is used for a bicycle, indicating dimensions. 5 Make working drawings for three threads of the screw on a scale of 2 inches to 1 foot. 6 Make in a rectangle, 9 inches by 4 inches, a perspective sketch in light and shade or color, of a lodge having a cylindrical tower with conical roof; the lodge having also a round-arched entrance to the grounds beyond. 7 Draw with instruments a rose window with quatre-foil tracery, four inches in diameter. 8 Which of the Greek orders has a column without a base? Which was most used by the Romans? What architectural style is suggested by the description of the lodge in No. 6? What method of roofing caused the development of Gothic architecture? What style of architecture is alive in France to-day? To what style is the rose window of No. 7 appropriate? If the body of a design is in salmon pink, what is the back-ground color if a complementary is used? What is a triglyph; an entasis; an ogee curve? 9 If a terra cotta moulding is to be made, can a metal frame-work be used? In what would you model it, and what would be the shrinkage? In modeled ornament do you prefer to see tool or thumb marks? In what would you model a light scroll ornament for a key-escutcheon to be cast in brass? 10 Draw a chair as you see it. Put a cube in (mechanical) angular perspective at angle of 30 degrees and 60 degrees to the picture plane, showing construction.

Examiner, Department of Public Instruction. Compensation $3.00 to $5.00 per day when employed. Open to both sexes. Subjects of examination: For all candidates, spelling, grammar, arithmetic, geography and school law.

Candidates must also *choose* and qualify in one, two or three of the following groups. A separate eligible list will be formed for each group except drawing. Time allowed for the preliminary subjects and one group of optional subjects, eight hours. For each additional optional group, four hours. In making up the averages, equal weight is given to the preliminary subjects and to the group of optional subjects.

Group 1 English and history: rhetoric and composition, English literature, American history, civics.

2 Mathematics and science: algebra, geometry, physics, chemistry, physiology and hygiene.

3 Languages: French, German, Latin.

4 Professional subjects: methods and school economy, history of education, art of questioning.

5 Drawing: (To be taken only in connection with one of the preceding groups.)

Specimen questions

1 *Spelling.*— Similar to that for clerk, page 19.

2 *Grammar.*— The first three questions refer to the following quotation: "Every *now and then* a slow, sleepy swell would come and lift the boat upon its shoulders, up the long, green, watery slope and down another, setting the heaps of stones rolling and grinding *one* against the other. *Whenever* this happened, the little figure upon the ballast would get temporarily dislodged from its perch, and sent rolling, now to one side, *now* to the other, *according* as the boat moved, or the loose freight shifted its position." 1 Give the syntax of the italicized words. 2 Select and parse all the participles. 3 Classify every clause. 4 Write sentences containing (a) a clause expressing condition; (b) a collective noun as the subject of a plural verb; (c) a restrictive adjective clause; (d) a verb with the auxiliary *may* or *should* but equivalent to the subjunctive in meaning. 5 Explain the peculiar use of the words italicized in three of the following: (a) *almost* a mile long; (b) *a* few books; (c) they went on playing just *the* same; (d) it did him *good.*

3 *Arithmetic.*— 1 A merchant bought flour at 12½% discount from the retail price and sold it at the retail price, $5.25 per barrel. What was his gain per cent? 2 A square field contains 4 acres, 25 square rods. Find the length of one side of the field. 3 If a train running at 52 miles per hour leaves New York for Albany at 8:30 A. M., and a train running 40 miles per hour leaves Albany for New York at 9:15 A. M., the distance from Albany to New York being 144 miles, find at what time and how many miles from Albany the trains will meet. (The speed may be assumed as uniform from start to finish.) 4 The proceeds of a note for 1 mo. 18 days, when discounted at a bank at 5% the day it was given, were $1869.35. What was its face? 5 If my money is in a savings bank paying semi-annual interest on the first days of January and July at the rate of 3½% per annum, and I wish to invest it in stocks on the 15th of October, is it better to withdraw my money from the bank for the purpose or to borrow until the first of January, money being worth 6%? How much difference would there be on $1,000?

4 *Geography.*— 1 Explain how each of the following is formed and mention one notable example of each: (a) fiord; (b) cañon; (c) glacier. 2 Name the principal ports of Europe with which New York is connected by steamship lines. 3 Describe Puerto Rico as to (a) location; (b) chief city; (c) inhabitants; (d) exports. 4 Account for the growth of the following cities: Berlin, Liverpool, Chicago, Denver, Syracuse. 5 Show the result of natural causes in the occupations and general character and condition of the people of (a) New York State; (b) Western Kansas and Nebraska; (c) Holland; (d) Italy.

5 *School law.*— 1 Who are entitled to vote at a school meeting? 2 In what ways are state funds allotted to the schools of the state? 3 State the procedure necessary to the establishment of a union free school. 4 Mention the various ways in which licenses to teach may be obtained in this state. 5 Discuss the status of religious exercises in the public schools of this state. 6 What are the powers and duties of the Superintendent of Public Instruction?

Group 1 *English and history.*— 1 Discuss the relation of grammar to the art of composition. 2 Outline a series of lessons on the paragraph for pupils in the highest grammar grade. 3 Discuss the value of figures of speech. Mention three of the most common faults in the use of figures. 4 Describe your method of procedure in criticizing (a) a paraphrase; (b) an original narrative. Aside from grammatic errors, what points should be considered in each case. 5 Criticize the following outline for wording as well as unity, simplicity, sequence and proportion. Rewrite in accordance with your criticisms, making the outline show the topic of each paragraph you would include in the essay:— The value of the printing press. Introduction: Invention of the printing press. Discussion: 1 Improvements in press since invention; 2 Printing fixes language forms; 3 Preserves learning; 4 Diffuses knowledge; 5 Carries news; 6 Promotes intelligence; 7 Economy of time; 8 Economy of labor; 9 Commercial value; 10 Material value; 11 Social value. Conclusion: Has been of great benefit to the world. 6 Comment on the value of pupils of memorizing selections from English classics. Make a list of five poems and five prose productions especially suited to this purpose, and name the author of each. 7 What is the particular service for which English literature is indebted to Wycliff? to Caxton? to Pope? to Daniel Defoe? to Thomas Sackville? 8 Name the authors of the following works and classify each novel according to its predominant character as historic, descriptive, social or ethical: Hypatia, Uncle Tom's Cabin, Dombey and Son, The Kentucky Cardinal, Daniel Deronda. 9 At what time was English literature greatly affected by (a) Italian example and influence? (b) by French influence? (c) Show why such influence was felt, and name two representative authors of each period. 10 Write on one of the following topics: (a) the beginnings of English literature; (b) the Brook farm experiment; (c) American humorists. 11 Account for the scattered settlements in New England. Cite particular examples to illustrate your reasons. 12 What political principles did each of the following leaders advocate: Jefferson, Calhoun, Buchanan. 13 Choose and answer *one* of the following: (a) Outline Franklin's plan of union, (b) Give the history of the Whiskey Ring, (c) Describe the panic of 1873, with causes. 14 Describe fully, giving the immediate cause and result of each, the various compromises relating to slavery during the period preceding the civil war. 15 Outline the history of the American Indians since the revolutionary

war, including the most important Indian wars. 16 Write an abstract of three important topics from the President's message. 17 Name the United States courts and define the jurisdiction of each. 16 Outline the steps in electing a president of the United States from the calling of the town caucus to the inauguration of the president. 19 Distinguish between a direct and an indirect tax. Discuss the value of the two methods. 20 State briefly the work of each of the educational departments of the state government. 21 Mention and discuss briefly (a) the qualifications of a voter; (b) the preference accorded to veterans in civil service appointments; (c) two restrictions on acts of the legislature, as found in the New York state constitution. 22 Explain the process of naturalization.

Group 2 *Mathematics and science.*— 1 Find the prime factors of the following: (a) $x^3 + 3x^2 - 4$; (b) $5x^2 - 29xy + 36y^2$. 2 Extract the square root of $9x^{-4} - 18x^{-3}y^{\frac{1}{2}} + 15x^{-2}y - 6x^{-1}y + y^2$. 3 Solve $4x^4 - 20x^3 + 25x^2 = 6 + (2x^2 - 5x)$. 4 Solve the simultaneous equations: $x - y = 218$; $\sqrt[3]{x} - \sqrt[3]{y} = 2$. 5 Derive the formula for the area of a triangle in terms of its sides. 6 Find the locus of the vertex of a right triangle, having a given hypothenuse as base. Demonstrate. 7 The square of the bisector of an angle of a triangle is equal to the product of the sides of this angle diminished by the product of the segments determined by the bisector upon the third side of the triangle. 8 A stone is dropped into a dark mine by a person at the top, who hears 6 seconds later the sound made by the stone striking the bottom. How deep is the mine? 9 Trace the changes in the density of water in passing from −10 degrees C. to 110 degrees C. Show in this a wise provision in nature. 10 If yellow and blue paints are mixed, the resulting color is green; but, if yellow and blue lights, of the proper shades, are thrown on a screen together, the resulting light will be white. Explain these results. What are complementary colors? 11 Explain or define the terms: (a) potential; (b) electrolysis; (c) cathode; (d) electromagnetic unit; (e) isogonic lines; (f) lines of magnetic force; (g) polarization of a cell; (h) hysteresis; (i) galvanoscope; (j) watt. 12 Three conducting wires, whose resistances are 11, 3 and 8 ohms respectively, are joined in parallel. What is the resistance of this compound conductor? 13 State and explain Mendeleef's Periodic Law. Of what service has it been to the advancement of chemical research? 14 What are the halogens? Describe their most important physical and chemical qualities. 15 Describe the process of producing iron from its ores, explaining the chemical reactions that occur. What properties are given iron by the addition of (a) manganese: (b) carbon; (c) sulphur? 16 How much, by weight, of carbon dioxide can be made from 10 lbs. of pure chalk? Given the following atomic weights: Ca=40, C=12, O=16, S=32. 17 Name and trace five pairs of cranial nerves. 18 Explain the processes involved in the production of energy in the body. 19 Discuss the theory of vaccination. 20 Draw a longitudinal section of a human kidney and name the parts shown.

Group 3 *Languages.*— French, German, Latin.

Group 4 *Professional subjects.*— Methods: 1 Explain briefly the meaning of the following quotation: "The thought in the thing and the law in the mind determine the method." 2 Give in proper order the steps of an in-

duction. 3 Distinguish between general notions, or concepts, and special notions, or percepts. Illustrate. 4 What bearing has the nature of general notions on the function and place of laboratory work in science teaching? 5 What bearing has the principle of apperception in determining the need and place of a first hand study of the geography of the home locality in geography teaching? Illustrate. 6 Explain what is meant by (a) preparation; (b) presentation; (c) application work, in teaching a pupil a new general notion. 7 What has the principle of association to do with the value and need of application work following presentation? 8 (a) Distinguish between empirical interest and speculative interest. (b) Which is developed earlier in the child?

School management: 1 Distinguish between (1) method; (2) class management; (3) discipline. (b) Under which of the above heads would you class (1) the seating of the pupils; (2) questioning; (3) avoidance of whispering? Give *one* additional illustration under each head. 2 Have the method and class management employed any bearing upon the problem of securing good order? Discuss briefly. 3 Give two reasons in favor of having a set of "rules" whose disobedience constitutes a misdemeanor on the part of the pupil. Give two reasons against such rules. 4 Do the comfort and pleasantness of the school room sustain any relation to good order? Give reasons for your answer. 5 How may the school discipline be made to result in self-control on the part of the pupil? Give three suggestions.

History of education: 1 What marked change from the past characterized the system of education that had its rise at the period of the Reformation? 2 To what period does Comenius belong? Name two of his most important works. What do you consider to be one of his chief contributions to education? 3 (a) What was the purpose and effect of the Emile? (b) Who was its author? 4 (a) What was Pestalozzi's mission as an educator? (b) In what sense were his schools a success? a failure? 5 (a) What was Froebel's greatest contribution to education? (b) With what other great educational genius was he contemporary? 6 What can you say of the doctrine of Herbart as to (a) the aim of education; (b) the basal sciences of education; (c) the six kinds of interest? 7 (a) What changes have taken place in our educational system in the past fifty years with regard to (1) co-education; (2) employment of women teachers; (3) development of free schools? (b) Do you consider these features at all interrelated? If so, how? 8 (a) Compare briefly the value ascribed to natural sciences and the classics as instruments of education at the beginning of the 19th century with the value accredited to them at its close. (b) To what do you attribute the change?

Art of questioning: 1 Name three different purposes for which questions may be employed by the teacher. 2 Give two suggestions as to the kind of questions most desirable in a final quiz? 3 State three qualities essential to a good question. 4 Should the teacher make a practice of repeating the pupil's answer to a question? Why? 5 Should the class or the pupil reciting ever be left in doubt as to the correctness of an answer given? State a reason for your answer.

Teacher, state institutions. Salaries $360 to $600 and maintenance. Open to both sexes. Candidates must hold a second grade certificate to teach in the public schools of the state or equivalent. Time allowed, eight hours. These positions are exclusively in state institutions of a charitable or correctionary

nature, such as the State Industrial School, Houses of Refuge, State School for the Blind, etc., and the incumbents of the different positions are often required to have a knowledge of a special subject, such as vocal and instrumental music, kindergarten work, typewriting, gymnastics and physical culture, etc.

	Subjects of examination	Relative weights
1	Spelling	1
2	Civil government	1
3	American history	1
4	Methods and school economy	2
5	Arithmetic	1
6	Geography	1
7	Grammar	2
8	Physiology and hygiene	1
	Total	10

1 *Spelling.*— Similar to that for clerk, page 19.

2 *Civil government.*— 1 How many representatives in each branch of the legislature of New York? How many has New York state in each branch of congress? 2 Name and locate three state institutions in which teachers are employed. 3 What are the duties of a district attorney? Of a surrogate? 4 State the composition and the duties of a grand jury. 5 How may the Governor treat a bill that he desires should become a law? 6 Can the state of New York enter into an arrangement with Canada regarding the lumber trade? Give a reason for your answer. 7 Why should a foreigner desire to become a citizen of the United States? How can he become naturalized? 8 What is an *ex post facto* law? Give the enacting clause of a bill. 9 What is the advantage of the "committee system" in legislation? 10 What are the qualifications for a member of congress? For a United States senator?

3 *American history.*— 1 Mention the four leading European nations that planted colonies in America, and name one colony planted by each. 2 Name the two most important colonies at the time of the American revolution. 3 Who was president when Louisiana was purchased? What did Louisiana then include? 4 What four vice-presidents have become president through the death of the president? 5 When and where did the second continental congress meet? When and where was Washington inaugurated? When did the city of Washington become the capital? 6 Mention two prominent generals of the war of 1812. 7 From what state was Henry Clay, John C. Calhoun, Daniel Webster, Abraham Lincoln, Roscoe Conkling? 8 When was the Republican party organized? What was the leading principle of the party at its organization? 9 Give the substance of the Monroe doctrine. 10 When did the importation of slaves into the United States cease? When and by what measure did slavery in the United States cease?

4 *Methods.*— 1 How may a teacher cultivate a taste for good reading? 2 Mention six objects of the recitation. 3 What is understood by "Author's Day Exercise" in school work? 4 Explain your method of teaching beginners to read. 5 Briefly describe the word method in teaching reading.

5 *Arithmetic.*— 1 Add the following, placing the total at the bottom:

$781,947	19
40,255	81
59,748	60
57,137	50
129,640	05
91,187	77
58,076	59
342,369	95
66,553	63
60,739	55
45,573	01
825,963	21
97,330	77
58,026	30
52,677	83
37,620	62
68,529	11
68,609	83
64,047	11
40,367	10
42,174	60
95,773	42
39,083	47
46,208	45

2 Reduce 5 tons, 3 cwt., 15 lbs., 3 oz., to ounces. 3 Write in Roman notation 95, 142, 369, 1895. 4 Find the cost at $7.50 per thousand of the brick required for the four walls of a house 30 feet long, 24 feet wide and 18 feet high, walls one foot thick, allowing 21 bricks to the cubic foot and 10% for openings. 5 How much money must be invested in stocks paying five per cent. and selling at 120, to produce an income of $2,000 per annum? 6 If in five days a clerk can copy 125 pages of 36 lines each, 11 words to the line, how many pages of 30 lines each and 12 words to the line can he copy in six days? 7 A lot which was 53 feet wide and 150 feet long sold for $8,347.50, which was one-fourth more than it cost. What was the cost per square foot? 8 Find the simple interest on $2,580 at seven per cent per annum for 3 years, 5 months and 15 days. 9 Simplify the following $\frac{1\frac{1}{2}+2\frac{3}{8}}{4\frac{1}{10}-2\frac{4}{5}} \times \frac{\frac{3}{4}\times 1\frac{2}{3}}{1\frac{1}{4}} \times 6\frac{1}{2}$. 10 A sum of money placed at simple interest amounted in one year and six months to $2,687.50. If it had remained at the same rate of interest for six months longer it would have amounted to $2,750. What was the rate of interest per annum?

6 *Geography.*— 1 Distinguish between a great and a small circle. Name the meridians that bound the western hemisphere. 2 Mention two causes of the change of seasons. 3 Locate the Hawaiian Islands. What are their chief productions? 4 Name and locate by counties five cities in New York state, on the Erie canal. 5 England and Labrador are in the same latitude; account for the difference in climate. 6 What is the leading country of South America? In what zone is it, and what are its leading exports? 7 Name and locate two places in New York state of historic interest. Name and locate three famous battles of the civil war. 8 Name two republics in Europe; two constitutional monarchies; one absolute monarchy. 9 What European nations have extensive interests and territories in Asia? 10 Name the states wholly on the east bank of the Mississippi River. What and where is Yokohama, Danube, Klondike, Oklahoma, Transvaal?

7 *Grammar.*— "If we compare our English literature to a beautiful garden, where Milton lifts his head to heaven in the spotless chalice of the tall white lily, and Shakespeare scatters his dramas around him in beds of fragrant roses, blushing with a thousand various shades,— some stained to the core as if with blood, others unfolding their fair pink petals with a lovely smile to the summer sun,— what shall we find in shrub or flower so like the timid, shrinking spirit of William Cowper as that delicate sensitive-plant, whose leaves, folding up at the slightest touch, cannot bear even the brighter rays of the cherishing sun?" 1 Make a list of such words in the above exercise as are used adjectively. 2 What part of speech (or kind of word) is "what?" 3 In what

case is "spirit?" 4 What part of speech (or kind of word) is "up?" 5 In what mood is the last verb of the exercise? 6 In what mood and tense is the first verb? 7 In what case is "sensitive-plant?" 8 Select from the exercise three adjectives representing each of the different degrees of comparison. 9 Parse "whose." 10 Parse the leading or principal subject of the exercise, according to any method with which you are familiar. 11 Give an analysis or diagram. 12 Does the clause (beginning with "If" and ending with "sun") make complete sense taken by itself?

8 *Physiology and hygiene.*— 1 What is the name of the poisonous element in tobacco? 2 What provision has nature made for reducing the temperature of the body and so preventing it from becoming excessively heated? 3 Why is it more wearisome to stand still than to walk about? 4 Name five articles of food that are rich in albumen? 5 Where does the saliva originate? 6 When beef is eaten, which of the digestive fluids is principally concerned in dissolving or digesting it? 7 Give two objections to having windows of a school-room in front of the pupils. 8 Give three directions for preserving the teeth, to which the attention of children should be called. 9 Describe the effect of alcohol on the lining of the stomach. 10 Where is the larynx located?

IV Special and technical examinations of infrequent occurrence

There are many special and technical positions in the state service in which vacancies are of infrequent occurrence and for which examinations are held only when vacancies occur. As to such examinations no detailed information can ordinarily be given in advance of the advertisement of examination. For most of these positions the examination consists entirely of questions upon the duties of the position, the technical knowledge required for their performance, and the experience and special and general education of candidates. A partial list of such examinations held in the past is given below. *No specimen questions for such examinations can be furnished,* nor will the subjects of examination and relative weights necessarily be the same in future examinations of similar character, as the Commission will be governed by the immediate needs of the service at the time the examinations are called. Many of these special examinations are open to non-residents of the state, under the provisions of Rule IX, section 2, and Regulation X. In such cases, if the resulting eligible list "contains the names of three or more persons who are citizens and residents of New York state, such persons shall be preferred in certification to non-residents."

Agent, Craig Colony. Salary $5 per day when employed. The duties of the position are to investigate the financial condition of patients applying for admission. Subjects of examination and relative weights: Letterwriting, 2; questions on the duties of the position, and the laws, rules and regulations governing Craig Colony, 5; experience and education, 3.

Assistant, antitoxin laboratory, department of health. $720. Open to women only. Subjects of examination and relative weights: Bacteria, their nature, position among other living objects, functions, classification, principles

of bacteriological manipulations, methods of making and testing culture media, sterilization of instruments and media, preparation of diptheria toxin, etc., 8; experience and education, 2.

Assistant in bacteriology, agricultural experiment station. $600. The essential requirements are a general knowledge of the subject of bacteriology, as well as a training in the technique of media making, staining, preparation of various forms of aerobic and anaerobic cultures, and qualitative and quantitative examination of infected substances. This fundamental training should have been supplemented with work directly connected with the bacteria of the dairy. Candidates should be sufficiently familiar with the principal methods of research work to plan and carry on experiments with only general supervision by others. It is also desirable that the incumbent of this position shall have had broad training in biology and in plant morphology and physiology, as well as a reading knowledge of French and German.

Assistant in entomology, agricultural experiment station. $600. The essentials for this place are special training in economic entomology and a familiarity with scale insects, sufficient familiarity with museum methods to do satisfactory museum work under general supervision, ability to take immediate charge of field experiments and a willingness to devote much time to this work, and a working knowledge of photography. A familiarity with biological problems and methods of research in biology, and an ability to read French and German are desirable.

Assistant chemist, agricultural experiment station. $600. This man should be a successful graduate of a full chemical course in one of our better institutions.

NOTE.— The competition for scientific positions at the agricultural experiment station is conducted as follows: Any candidate for the position to be filled shall transmit both to the Civil Service Commission and to the experiment station full statements covering his history and education and practical experience, the grade of work which he performed at college and elsewhere, with especial reference to the specialty he is to pursue at the experiment station, scientific investigations conducted, references to papers or other literature published, and abundant testimonials from former instructors and from associates in scientific work. He shall present himself for a personal interview with the chief examiner and director, or their representatives, when so requested. At the close of the time for receipt of applications, the director of the station, with the authority of the board of control of the station, shall transmit to the Civil Service Commission a list showing the relative capacity, fitness and desirability of the candidates for the position to be filled, accompanied by a statement of his reasons and any information about the candidates which he may have secured from personal investigation. This list upon its approval by the chief examiner shall become the eligible list for filling the position.

Assistant Bertillon indexer, state prison department. Open to men and women. Salary $40 per month. Subjects of examination and relative

weights: Penmanship, 2; questions on the Bertillon system of identification, and the duties of the position, 6; experience, 2.

Assistant, office of state entomologist. Open to men and women. $720. Subjects of examination and relative weights: Questions in systematic and economic entomology, 7; experience and education, 3.

Assistant, office of state geologist. $720. The incumbent of this position is employed mainly in office work involving a knowledge of geology and geological literature. Subjects of examination and relative weights: Questions upon geology and geological literature, 7; experience and education, 3.

Assistant in mineralogy, state museum. $900. Open to men only. Subjects of examination and relative weights: Experience and education, 3; questions in mineralogy, 7.

Assistant in photographic chemistry, cancer laboratory. $40 a month. The examination relates entirely to the duties of the position.

Assistant in zoology, state museum. $1,200. Open to men only. Subjects of examination and relative weights: Experience and education, 3; questions in zoology with special reference to vertebrate and systematic zoology, 7.

Assistant bacteriologist, department of health. $500. Open only to licensed medical practitioners of New York state. The incumbent must give half his time to the work, which must be the first charge on his time. The examination covers general knowledge of bacteriology and special knowledge of the methods and problems of the preparation of diphtheria and other antitoxins.

Assistant commissioner of agriculture. $1,500. Subjects of examination and relative weights: Questions on the laws relating to the department and methods of their enforcement, including detection of violations and prosecution of violators, 7; education, experience and personal qualifications, 3.

Assistant deputy sheriff, Kings county. $1,000. Open to residents of Kings county only. Subjects of examination and relative weights: Spelling, 1; writing from memory the substance of verbal orders, 2; copying from plain copy, 1; penmanship, 1; arithmetic (fundamental rules, fractions and U. S. money), 1; questions on the duties of the position, 2; experience and personal qualifications, 2. The questions are similar in scope and difficulty to those for messenger, guard, keeper, etc.

Assistant industrial superintendent, Auburn prison. Open to men only. $780 to $900. Subjects of examination and relative weights: Spelling, 1; arithmetic, 2; letter writing, 1; penmanship, 1; questions on the duties of the position, 2; experience and education, 3.

Assistant legislative librarian, state library. $600. The work consists in part in consolidating the annual bulletins of legislation issued by the library. Training in a good school of political science is essential. The examination relates wholly to the work of the position and the training and experience of candidates.

Assistant military instructor, Elmira reformatory. Open to men only. $900 to $1,000 and maintenance. Candidates must be between 25 and 45 years of age, at least 5 feet 8 inches in height and 140 pounds in weight, and must have had some military experience. Non-residents of the state will be admitted if they have had two years of experience in a prison or reformatory. Subjects of examination and relative weights: Military tactics, 3; arithmetic, 1; questions on institution discipline, 2; experience and education, 4.

Assistant superintendent, state hospital for crippled and deformed children. About $1,200 per year and maintenance. This officer is to be the business manager and steward of the institution. No medical knowledge is required. Experience in care of buildings and grounds and management of institutions and some knowledge of accounts desired. Subjects of examination and relative weights: Questions on the duties of the position, including care and management of institution, purchase of supplies, accounts, etc., 6; experience and education, 4.

Assistant superintendent, houses of refuge and reformatories for women. Open to women only. $900 to $1000 and maintenance. Subjects of examination and relative weights: Laws relating to the institutions, 1; institution management and discipline, 3; hygiene, sanitation and housekeeping, 2; letterwriting, 1; experience, education and personal qualifications, 3.

Associate in chemistry, $1,800; associate in clinical psychiatry, $1,200; chief associate in neuro-pathology, $1,800; Pathological institute. The examination relates wholly to the scientific knowledge required for the positions.

Autopsy physician, state hospital service. $1200 a year and maintenance. Open only to graduates of duly incorporated medical colleges. Subjects of examination and relative weights: Psychiatry, histology of the nervous system, methods of autopsy work, bacteriology, 8; education, experience and special training, 2.

Bakery keeper, state prisons. $75 per month. Candidates must be not less than 5 feet 7½ inches in height, nor below the minimum chest measure and weight indicated on the application. Candidates must submit to medical examination and certain tests of strength and agility by the Commission's examiner. Subjects of examination and relative weights: Physical examination, 5; writing from memory the substance of verbal orders, 2; arithmetic (fundamental operations, fractions and United States money), 1; questions on the duties of the position, 5; experience and personal qualifications, 2.

Bridge designer, office of state engineer and surveyor. $1,600 to $2,000. Candidates should have at least five years' practical experience in draughting, designing and constructing structural steel and bridge work. Subjects of examination and relative weights: Questions on graphical and analytical determination of stresses in simple highway trusses and plate girders, and design of plate girders, floor beams, truss members, foundations, bearings, etc., including draughting, 6; experience and education, 4. For part of the examination candidates may use tables and books of reference as desired. The Carnegie and Pencoyd handbooks are suggested.

Bridge draughtsman. $1,500 to $1,800. Subjects of examination and relative weights: Experience and education, 4; practical and theoretical questions and drawing, 6.

Bridge draughtsman (junior), office of state engineer and surveyor. $900 to $1,300. Candidates must have had some practical experience in mechanical or structural draughting. The examination covers experience and education, freehand sketches of structural shapes and simple members built up of shapes, freehand letter-writing, detail drawing and tracing and calculation of weights.

Chef or head cook, state institutions. Open to men only. $50 to $75 per month and maintenance. Subjects of examination and relative weights: Practical questions on the duties of the position, 5; experience, 5.

Chemist, state board of health. $125 per month. The examination consists entirely of practical questions relating to analysis of food products and questions relating to experience and training of the candidates.

Chief clerk, office of state engineer and surveyor. $2,500 to $3,000. Candidates should have acquaintance with the work and requirements of the department as well as experience in the general methods of routine work in state departments; should also have had experience as managing clerk in charge of office work. Subjects of examination and relative weights: General questions covering office practice relating to the methods of preparing contracts, execution of same, payments to contractors; appointments of employees and rules relating to same; special fitness for conducting correspondence; filing of documents; bookkeeping, 3; questions on the laws relating to the department and its organization and administration, 3; experience and education, 4.

Cooking instructor, state institutions. Open to men and women. $40 to $50 per month and maintenance. Subjects of examination and relative weights: Practical questions relating to the duties of the position, 5; experience, education and special training, 5.

Clerk, transfer tax bureau, comptroller's office. Open to men only. $1,200. Subjects of examination and relative weights: Questions relating to surrogate's practice, laws of descent and distribution, and transfer tax law, including problems in the application of the law, 8; experience and education, 2.

Clerk and statistician, department of labor. $1200 to $1500. Subjects of examination and relative weights: Arithmetic, including test in rapid computation, fundamental rules, fractions, percentage, averages, etc., 3; statistics, tabulation, computation, deductions, etc., 3; economics with special reference to industrial relations, theory and principles of labor legislation, principles of collective bargaining (trade agreements), 2; experience, education and special training, 2. Style and composition will be considered in rating the answers.

Custodian or messenger, Kings county service. Open to men only. $720 to $1,000. Subjects of examination and relative weights: Spelling, 1; writing from memory the substance of verbal orders, 2; copying from plain copy, 1; penmanship, 1; arithmetic (fundamental rules, fractions and U. S. money), 1; questions on duties, 2; experience, 2. The questions are similar to those given for messenger.

Dairy helper, agricultural experiment station. $600. Open to men only. The appointee should know how to run separators and other dairy machinery, should understand the care of milk and cream and the making of butter; a knowledge of cheese making is desirable. Subjects of examination and relative weights: Practical questions on the duties of the position, 7; experience, education and special training, 3.

Dentist, state institutions. $480. Candidates must have the license required by the state law for the practice of dentistry. The examination consists entirely of practical questions relating to theory and practice of dentistry.

Deputy warden, Kings county jail. $2,000. Open to residents of Kings county only. Subjects of examination and relative weights: Questions on the duties of the position, 4; writing from memory the substance of verbal orders, 2; arithmetic, 1; experience and education, 3.

Director, pathological institute, state commission in lunacy. $5,000. Subjects of examination and relative weights: Pathological anatomy of the nervous system, technique and methods of neural investigation, architecture of the nervous system and lines of research to be applied to the study of the pathology of insanity, 8; experience, 2.

Draughtsman, office of state paleontologist. Open to men and women. $900. Minimum age, 20 years. Candidates must be able to make structure and detail drawings of fossils with brush and wash (black India ink, hard or soft), also with pen and ink in pure line and in pure stipple. They are allowed to submit drawings under conditions announced.

Elevator conductor, city and county hall, Buffalo. $36 per month. Open to residents of Erie county only. Minimum age, 18 years. Subjects of examination and relative weights: Spelling, 1; copying from plain copy, 1; writing

from memory the substance of verbal orders, 2; penmanship, 1; arithmetic (fundamental operations), 1; questions on the duties of the position, 2; experience, 2.

Examiner, state civil service commission. $900 to $1,200 per annum. Open to men and women. Subjects of examination and relative weights: Experience and education, 1; arithmetic, 2; grammar and English composition, 2; copying from rough draft, 1; penmanship, 1; history, constitutions and government of New York and the United States, 1; rating of examination papers, 2.

Examiner in Latin and sciences, department of public instruction. $1,500. Open to men only. Subjects of examination and relative weights: Latin grammar, Cæsar and Virgil, 5; physics, 3; physiology and hygiene, 2.

Fireman of steam boilers. Subjects of examination and relative weights: Practical questions on care and firing of boilers, 5; experience, 5.

First assistant horticulturist, agricultural experiment station. $960. The requirements of the position are a good knowledge of the principles and facts underlying the general practice of horticulture with especial reference to fruit culture and greenhouse work; a general acquaintance with botany, plant pathology, economic entomology and the treatment of plant diseases and insects injurious to cultivated plants; a good academic training and the ability to present a subject clearly, at least, in writing. A reading knowledge of French and German, some skill in photography and the ability to manage men are desirable qualifications. Other things being equal, preference will be given to candidates who have taken post-graduate studies or made special investigations in subjects pertaining to horticulture and physiological botany. See note, page 80.

Foreman of chair industry, state prisons. $2.50 per day. Candidates are rated upon their education, training and experience as shown by their sworn statements and by inquiries made by the Commission of their former employers, etc.

Foreman of fish hatching station. Open to men only. $90 per month. Subjects of examination and relative weights: Practical questions relating to the duties of the position, 6; experience and education, 4.

Foreman of foundry, state prisons. $5 per day. Subjects of examination and relative weights: Practical questions on management of foundry, moulding and casting, 5; experience, 5.

Foreman in horticulture, agricultural experiment station. $50 per month. Subjects of examination and relative weights: Practical questions on the duties of the position, including superintendence of greenhouses, methods of propagating and growing plants, fruits and vegetables, keeping of records,

horticultural field work and experiments, testing of varieties, greenhouse gardening and orchard practice, 7; experience and education, 3.

Foreman of machine woodworking, school furniture department, state prisons. $2.50 per day. Subjects of examination and relative weights: Practical questions, 6; experience, 4.

Foreman of public works. Open to men only. Compensation $2.50 per day and upwards when employed. Candidates must have had thorough practical experience as foremen or in charge of men upon public works or other engineering constructions. Subjects of examination and relative weights: Practical questions on methods of construction and the employment and handling of men, 5; experience, 5.

Gardener, state institutions. Open to men and women. $40 per month and maintenance. Subjects of examination and relative weights: Practical questions on flower and vegetable gardening, care of grounds and general duties of gardener, 5; experience, 5.

Head teacher of music, state school for the blind. Open to both sexes. $900 and maintenance. Subjects of examination and relative weights: Experience and education, 4; practical questions and practical tests relating to the duties of the position, including voice, piano, and organ, 6.

Heating engineer, state architect's office. Open to men only. $2,000. The duties are to design and superintend the construction of the heating and ventilating apparatus in state buildings. Subjects of examination and relative weights: Theoretical and practical questions on heating and ventilation, 6; experience and education, 4.

Inspector of schools, regents' office. Open to men only. $2,400. Preliminary requirements: (a) Graduation from a college registered by the regents as maintaining a satisfactory standard; (b) successful experience as principal of a secondary school. Subjects of examination and relative weights: Experience and education, 2; general examination, 5; special examination, 3. The general examination covers history of education, especially in New York state, and questions on school economy, including arrangements of school buildings, heating, lighting, plumbing and ventilation, floor space; equipment, including furniture, library and apparatus; courses of study, arrangement of programs, methods of instruction, advantages and disadvantages of the departmental system, time saving devices, etc. In the special examination each candidate is permitted to select one of the following groups: (a) English language and literature; (b) German and French; (c) Latin and

Greek; (d) mathematics (arithmetic, algebra, geometry and trigonometry); (e) physical sciences (physics, chemistry and astronomy); (f) biologic sciences (botany, zoology, physiology and hygiene); (g) history and social science (general history, United States history, civics and economics). The examination in each group covers the topics involved in secondary school work, together with special methods of instruction and the special training and experience of the candidate in the subjects of the group chosen.

Instructors in blacksmithing, bookbinding, brass-smithing, bricklaying, carpentry, engraving (jeweler's), machinery, machine woodworking, cabinet-making, masonry, painting, plumbing, printing, sloyd, tailoring, tin-smithing and wood-carving, state prisons, reformatories and institutions. $65 to $75 per month and board. Subjects of examination and relative weights: Practical questions on the duties of the position, 4 to 6; experience, 6 to 4.

Interpreter, supreme court. $2,500. The position requires knowledge and ability correctly and rapidly to translate orally from English into the foreign languages and vice versa. The incumbent of the position must know thoroughly not only the written languages but their dialects and idioms as spoken by the immigrants to this country. Candidates must qualify in *all* the following languages: Italian and its dialects; German and its dialects; French, Spanish and Yiddish or Hebrew jargon. The examination in each language will consist of: 1 Written translation from dictation in English into the foreign language. 2 Written translation from dictation in the foreign language into English. 3 Written translation of printed matter from the foreign language into English. 4 Direct oral translation of matter in the form of testimony dictated by the examiner, from English into the foreign languages and vice versa.

Janitor, state normal school. $800 per annum and quarters. Open to men only. Subjects of examination and relative weights: Writing from memory the substance of verbal orders, 2; arithmetic (fundamental rules, fractions and U. S. money), 1; questions on the duties of the position, 4; experience, 3.

Kitchen keeper, state prisons. $100 a month. Candidates must be thoroughly experienced cooks. They must be not less than 5 feet, 7½ inches in height nor below the minimum chest measurement indicated on the application. Subjects of examination and relative weights: Writing from memory the substance of verbal orders, 2; questions on the duties of the position, 5; experience and personal qualifications, 3.

Marshal, houses of refuge and reformatories for women. $60 per month and maintenance. Open to women only. Subjects of examination and relative weights: Laws relating to the houses of refuge (see state charities law), 1; letter writing, 2; questions on the duties of the position, 4; experience and education, 3.

Matron, Kings county jail. Open to women only. $1,000. Subjects of examination and relative weights: Spelling, 1; writing from memory the substance of verbal orders, 2; copying from plain copy, 1; penmanship, 1; arithmetic (fundamental rules, fractions and U. S. money), 1; questions on duties, 2; experience and personal qualifications, 2.

Operator of inclined railway, state reservation at Niagara. Open to men only. $75 per month. Candidates are rated on their experience and fitness for the position as shown by their sworn statements and by inquiries made by the Commission of their former employers, etc.

Parole officer, house of refuge for women, Hudson. $720 and maintenance. The duties are to investigate families applying to take inmates on parole and to have charge of paroled inmates. Open to women only. Subjects of examination and relative weights: Experience, training and education, 3; laws relating to the house of refuge (see state charities law), 1; letter writing, 2; questions on the duties of the position, 4.

Physician, New York county jail. $1,000. Candidates must be residents of New York county and licensed medical practitioners of the state of New York. Subjects of examination and relative weights: General medicine and surgery, 6; questions on organization and administration of medical department, 2; experience, 2.

Physician, eastern New York reformatory. $2,000. Candidates must be licensed medical practitioners of New York state. Subjects of examination and relative weights: Experience, 2; general medicine and surgery, 5; questions on administration of medical department, 3.

Physician, reformatory for women, Bedford. $1,200 and maintenance. Candidates must have had at least one year's experience in a hospital. Subjects of examination and relative weights: Oral examination "to test capacity, etc.," 3; medical questions, including anatomy, physiology, materia medica and therapeutics, chemistry, obstetrics, theory and practice, surgery, 3; questions on treatment for victims of liquor, opium and nicotine habits, 2; questions on connection between disease and moral deterioration and treatment, 2.

Physician, state industrial school. $1,500 per annum and maintenance. Candidates must be licensed practitioners of New York state and have had one year's experience on the staff of a hospital. Subjects of examination: materia medica and therapeutics, theory and practice, surgery, hygiene and sanitation, pathology and diagnosis, hospital management, experience and education.

Physical instructor, state institutions. $45 to $60 per month and maintenance. Open to both sexes. Subjects of examination and relative weights: Questions on physiology and hygiene and methods of physical instruction, 6; experience, education and special training, 4.

Proof-reader. Salaries $900 to $1,500. Open to both sexes. Subjects of examination and relative weights: Spelling, 1; copying from rough draft, 1; correction of proof, 3; arithmetic, 1; editing and preparation of copy for printing, 3; questions on technical terms, practice and conventions of the printing trade, 1.

Special agent, department of public works. Open to men only. $4 per day. Subjects of examination and relative weights: Spelling, 1; arithmetic (fundamental rules, fractions, interest and percentage), 1; copying from plain copy, 1; letter-writing, 1; business law and the laws, rules and regulations governing the department of public works, 4; experience, education and personal qualifications, 2.

Structural engineer, state architect's office. $2000. The duties include calculation of strength and stability of structures, including floors, girders, roofs, columns, walls, piers and foundations, design of roof trusses, inspection of foundation soils, design of water supply systems, and require a knowledge of retaining walls, calculation of quantities, modern steel and concrete construction and road building. Subjects of examination and relative weights: Theoretical and practical questions, 6; experience and education, 2.

Superintendent, reformatory for women, Bedford. $1,500 and maintenance. Open to women only. Subjects of examination and relative weights: Oral examination "to test capacity, etc., 3; laws relating to the reformatory, 1; letter-writing, 1; physiology and hygiene, 1; sanitation and housekeeping, 2; institution management and discipline, 2.

Superintendent, state school for the blind. Open to men only. $2,000 and maintenance. Subjects of examination and relative weights: Practical questions on the duties of the position, objects and methods of instruction and management of institution, 5; experience, education and special training, 5.

Teachers of domestic science, cooking, laundry work, dressmaking and sewing, gardening, state institutions. $500 to $600 and maintenance.

Teacher of freehand drawing and clay-modeling, state industrial school. $40 to $60 per month and maintenance. Subjects of examination and relative weights: Practical questions and drawings, 5; experience and education, 5.

Teacher of music, state institutions. Open to men and women. $30 to $60 per month and maintenance. Requires ability to teach chorus singing and to play piano and pipe organ. Subjects of examination and relative weights: Practical questions on the duties of the position and tests of ability on piano and organ, 6; experience and education, 4.

Teacher of piano tuning, state school for the blind. $800 and maintenance. Open to men only. This examination consists principally of practical tests in tuning, and questions relating to mechanism and repair of pianos.

Telegrapher, state institutions. Open to both sexes. $480 to $720 and maintenance. Candidates must be at least eighteen years of age. Subjects of examination and relative weights: Spelling, 1; penmanship, 1; letter writing, 1; arithmetic, 1; practical questions on instruments, wires, batteries, etc., 2; practical tests in sending and receiving messages, 4. This examination is held only in cities where the necessary facilities for the practical test in telegraphy can be obtained.

Tracer. The examination consists of practical exercises in inking in drawings, making tracings and copies of drawings to scale.

Transfer agent, state reformatory, Elmira. Open to men only. $1,200 and maintenance. Candidates must submit to a medical and physical examination by the Commission's examiner. Subjects of examination and relative weights: Physical examination, 5; spelling, 1; arithmetic (fundamental rules, common and decimal fractions), 1; questions on the duties of the position, 4; education and experience, 4.

Van driver, Kings county jail. Open to men only, salary $1,000. Conditions, subjects of examination and relative weights same as for keeper, including medical and physical examination. A different paper on "duties" is given.

Veterinarian, department of agriculture and state board of health. $5 to $10 per day when employed. Candidates must be licensed veterinary practitioners of the State of New York. The examination is upon veterinary science with especial reference to the work of the state departments.

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Isaac Price.

8-14-07-3000 (10-5031)

New York State Civil Service Commission

GENERAL INFORMATION

CONCERNING

Examinations for the State and County Service

The work of the Civil Service Commission is governed by the "Civil Service Law," which is chapter 370 of the Laws of 1899. It provides for a State Civil Service Commission of three members which is charged with the duty of making rules governing appointments and promotions in the classified service of the State, and of its civil divisions except cities, and of holding examinations for such appointments. The law also provides for a municipal civil service commission in each city of the State with similar duties respecting the civil service of the city. The rules of the State Commission become effective on the approval of the Governor and those of the municipal commissions on the approval of the mayor of the city and of the State Commission.

The classified service is defined by the law and includes practically all subordinate officers and positions in the public service except officers and employees of legislative bodies (including boards of supervisors and councils or boards of aldermen in cities), military employees, and superintendents, principals and teachers in public schools. Positions in the classified service are placed by the law and rules in four classes, viz.:

The exempt class, containing positions to which appointment may be made without certification or examination by the Commission.

The competitive class, to which appointment must be made from the eligible lists resulting from open competitive examinations held by the civil service commissions, by transfer or promotion from some other position in the same class, or by reinstatement of some person previously separated from the service.

The noncompetitive class, to which appointments are made after non-competitive examination by the Commission of persons nominated by the head of the department.

The labor class, to which appointments in the cities are made from lists of applicants registered in the order of their applications; in the State and county service appointments to positions classified as labor positions are made without registration or examination in the same manner as to positions in the exempt class.

The Commission has no power of appointment or removal except for positions in its own office. It has no control over appointments to exempt positions, nor over nominations for noncompetitive positions. For positions in the competitive class, the Commission holds competitive examinations throughout the State from time to time in accordance with the needs of the service. The names of successful competititors are placed on the eligible lists in the order of their relative standing in the examination, except that veteran soldiers, sailors and marines, honorably discharged from the service of the United States in the civil war, who are successful in the examinations, are entitled to be placed at the head of the eligible lists and to be preferred in certification and appointment over others. When an appointing officer notifies the Commission of a vacancy, three names are certified from the head of the appropriate eligible list, from which he selects one for

appointment. His discretion in making such selection is absolute, except that the law requires that it shall be made without regard to political considerations. The names of persons certified but not selected for appointment remain on the list for further certification, except that the same eligible is not certified more than three times to the same appointing officer for the same position, unless requested by such officer.

CIVIL SERVICE OF COUNTIES

Under the provisions of section 9 of the Civil Service Law, the State Civil Service Commission, with the approval of the Governor, extended the State civil service rules to cover the civil service of the counties of Albany, Erie, Kings, Monroe, New York, Onondaga, Queens, Richmond and Westchester, and has classified the various offices and positions in such service. Appointments to positions in the county service classified in the competitive class are made from eligible lists prepared after examinations held by the State Commission. So far as they are applicable the general eligible lists will be certified for county positions, with the restriction that only residents of the county will be certified for the county service of any county. The Commission will certify residents of the county from any appropriate eligible list and will hold special examinations for such positions only when there is no appropriate list already established. Persons applying for county positions will, therefore, be notified for the general examinations for State and county positions so far as they are applicable.

CIVIL SERVICE OF CITIES

This Commission does not receive applications for admission to the civil service of the cities of the State. All such applications should be directed to the secretary of the municipal civil service commission in the city where employment is desired.

THE UNITED STATES CIVIL SERVICE

The New York State Civil Service Commission has nothing to do with examinations for United States civil service positions. For information concerning appointment to and examinations for the federal service, apply as follows:

For positions in the post-office, customs, internal revenue, mint and assay, subtreasury, and custodian (public buildings) services, address all communications to the Secretary of the Board of Civil Service Examiners for the district in which employment is desired. All of New York State is included in District II and the address of the Secretary for this district is "Custom House, New York City."

For all other positions in the United States service, including the Isthmian Canal service (Panama Canal), and in the Philippine civil service, address all communications to United States Civil Service Commission, Washington, D. C.

EXEMPT, NONCOMPETITIVE AND LABOR POSITIONS

The positions in the exempt and noncompetitive classes are enumerated in the civil service rules, and the positions classified as laborers are enumerated in the regulations. The Commission does not receive applications for appointment to such positions and as a rule cannot answer inquiries concerning them. Such applications and inquiries should be addressed to the superintendent of the institution or the head of the department having the power of appointment to the position. Copies of the rules and regulations may be had on application to the Commission.

DATES AND PUBLIC NOTICE OF EXAMINATIONS

There are no regular dates for any examinations held by the Commission. Dates are fixed for the various examinations in accordance with the needs of the service and public notice is given about one month in advance by notices mailed to newspapers in all parts of the State for publication and also by notices posted in the larger postoffices throughout the State. Inquiries as to the date of examination for any position cannot usually be answered until such notices are issued. About four weeks prior to each competitive examination a detailed circular of information is issued stating the positions for which examinations are to be held, the subjects of examination, preliminary requirements, etc., and this is mailed to all persons who request information concerning the examinations covered by the circular.

Special examinations will be called only when there is need for them to fill existing or prospective vacancies, and never upon the request of an applicant.

MAILING LIST

The names of persons making inquiry concerning examinations for which no date has been set will be placed on a mailing list and when the examination for which they apply is called a circular of the examination and an application blank will be mailed to the address entered on the mailing list. The Commission cannot undertake to enter names on the mailing list unless the applicants specify the kind of examination or nature of employment desired.

APPLICATIONS

All candidates for examination are required to make out applications on regular blanks furnished by the Commission. Applicants should use great care in executing their applications, answering every question on the blank, and carefully reviewing the jurat, physician's certificate, vouchers and application to see that all blanks are filled and all questions answered, and should forward them at the earliest date possible after the announcement of the examination. The object of the application is to show that the applicant is entitled to enter the examination by age, residence, citizenship, etc., at the time of the examination, and also to furnish the address of the applicant for such notices as the Commission needs to send. It is, therefore, important that the Commission be notified of any change in the address or residence occurring after the application is filed.

The application is also the basis for the rating on "experience" when required in any examination and applicants should be careful to state fully and plainly all the facts called for in the blank relating to their education and personal history.

Unless applications are received at the office of the Commission by noon of the seventh day prior to the date set for the examination, they may not be accepted for that examination and the candidate may have to wait for the next examination. So far as practicable the Commission will notify and examine persons who are unable to complete their applications and file them by the time specified, provided notice by letter or telegram of their desire to be examined, stating the place and kind of examination desired, reaches the office in time to permit the shipment of supplies for the examination, *but it cannot agree to do so, nor accept responsibility* for delay or miscarriage of requests circulars, applications or notices. Requests for application blanks and information should be addressed to "Chief Examiner, State Sivil Service Commission, Albany, N. Y.," and should if possible be sent so as to reach the Commission ten days before the date of examination, so as to insure ample time for completion and return of application.

Applicants of record will be notified by mail of the time and place of examination, usually about ten days in advance. If sickness or other sufficient cause prevents an applicant from attending the examination for which he is

notified, he may, by returning his notice, have his application kept on file for a future examination, provided such examination occurs within one year from the original filing of the application. Otherwise an application is good for only one examination and an applicant having entered one examination must file a new application for a subsequent examination either of the same or another kind.

PERSONS WHO WILL NOT BE EXAMINED

No person is eligible to a competitive examination — (a) who is not a resident and citizen of New York State (except as indicated below), (b) who is not within the age limitations prescribed for the examination for which he applies, (c) who is physically disqualified for the service which he seeks, (d) who is addicted to the habitual use of intoxicating beverages to excess, (e) who has been dismissed from the public service for delinquency or misconduct within one year preceding the date of his application, (f) who, within nine months has taken an examination for the same position for which he wishes again to apply, (g) who has made a false statement in his application or has been guilty of fraud or deceit in any manner connected with any application or examination under the Commission, or who has been guilty of crime or infamous or notoriously disgraceful conduct.

Nonresidents or noncitizens may be admitted to examination for the following positions: Attendants, nurses and orderlies in asylums and hospitals and similar institutions; also for positions as scientists, technical and trade instructors and positions requiring special training and education, provided that if the eligible list resulting from any examination held for such a position contains the names of three or more persons who are citizens and residents of New York State, such persons shall be preferred in certification to nonresidents.

PRELIMINARY REQUIREMENTS AS TO EDUCATION, EXPERIENCE, ETC.

No application for examination will be accepted unless the applicant satisfies all the preliminary requirements as indicated in the description of the particular examination. For professional positions candidates will be required to have the licenses required by law for practice of their respective professions in the State of New York. For most positions in the Education Department candidates must be graduates of a recognized high school or have an equivalent education, according to the standard of the Regents. For positions involving a knowledge of any trade candidates will be required to present evidence of having served the customary apprenticeship at such trade.

WHERE EXAMINATIONS MAY BE TAKEN

The Commission is required by law to hold examinations for all positions, except those the examinations for which "require special tools, machinery, appliances or laboratory facilities," in the following cities and towns:

Albany	Hornell	Newburg	Rochester
Amsterdam	Ithaca	New York	Syracuse
Auburn	Jamestown	Ogdensburg	Utica
Binghamton	Kingston	Olean	Watertown
Buffalo	Lockport	Plattsburg	
Elmira	Malone	Poughkeepsie	

WHAT APPLICANTS SHOULD BRING TO EXAMINATION ROOM

Persons taking the stenographer and typewriter examinations must provide themselves with typewriting machines and stands or tables; those taking

the bookkeeper draughtsman, or other examinations requiring the use of instruments, must furnish the instruments required. Candidates for draughtsman or tracer must bring draughting boards suitable for paper 8½ by 14 inches. All competitors must provide themselves with pens, penholders, pencils, erasers, ink and blotters. Competitors should not bring any paper for use in the examination room, as sufficient blank paper will be furnished for all purposes.

Each applicant *must present* his notice of examination in order to be admitted to the examination.

CHANGE OF ADDRESS

Applicants and eligibles must keep the Commission informed of any change of postoffice address. A failure to do so will be treated as the fault of the applicant or eligible and may result in his losing an opportunity of examination or appointment. Requests to have the address changed should be made by postal card and should state (a) position applied for, (b) date of examination, (c) rating obtained, (d) whether application filed or name placed on mailing list.

RULES GOVERNING COMPETITORS IN EXAMINATIONS

The following is a copy of the rules which are given to each competitor at the beginning of every examination:

1. You will find your examination number in the upper right hand corner of the Declaration Sheet which will be given you. *Write that number on each sheet of the examination. Fill out all blanks on question sheet before handing it in.*

2. See that each sheet received by you pertains to the kind of examination which you are taking, and take care that you do not omit any of the sheets. Competitors are held responsible for errors and omissions.

3. Do not leave the room, if possible to avoid it, with a sheet before you unfinished, for if you do, the sheet will be taken up and not be returned to you. Competitors are allowed to leave the examination room for luncheon on the completion of any sheet of questions after 12 o'clock. *No additional allowance of time* will be granted on account of such absence.

4. *Read carefully the printed instructions on each sheet before commencing work thereon.*

5. A question sheet spoiled by you can not be exchanged for another of the same kind.

6. Perform all work on each examination sheet with ink.

7. Pencil and scratch paper *furnished by the examiner* may be used in preliminary work, except in spelling, verbal order and plain copy exercises, which must be written with ink directly on the examination sheets from the dictation of the examiner.

8. Use no scratch paper except that furnished by the examiner, and, on completing an examination sheet, hand him the scratch paper pertaining to that sheet. Have all your work complete on the examination sheet, however, as the scratch paper is collected, not for consideration in the marking, but for destruction.

9. No helps of any kind are allowed unless expressly stated to the contrary on the question sheet or in the instructions sent to condidates. Before the examination is commenced, hand to the examiner any written or printed matter that you may have which might, if used, aid you in your work.

10. *All conversation or communication between competitors during the examination is strictly prohibited.*

11. Do not copy or attempt to copy from the work of any competitor, or permit any competitor to copy from your work or to read the examination sheets in your possession.

12. All necessary explanations will be made to the whole class. Examiners are forbidden to explain the meaning of any question or to make any remarks or suggestions that may assist in its solution.

13. From one to three months may elapse before you are notified of your standing. No unnecessary delay will occur in marking your papers, and you are requested not to increase the labors of the Commission by making inquiries in regard to your standing, unless you have reason to believe the notice to you has miscarried.

14. Copies of examination papers or examination questions must be handed in with the answers and *must not be taken from the room.*

N. B.— A violation by you of the instructions contained in paragraphs 9, 10 and 11 will be deemed sufficient cause for cancelling your papers. You are requested to report to the examiner any irregularity that may come under your notice during the examination.

METHOD OF MARKING EXAMINATION PAPERS

The following method is observed in marking examination papers by the examining division of the Commission.

After an examination is held, the papers are arranged by sheets or subjects and are forwarded under seal to the Commission. When they are reached in the order of marking, they are distributed by sheets to the examiners, Examiner A being given all of sheets 1, Examiner B all of sheets 2, Examiner C all of sheets 3. and so on. The work of each examiner is usually reviewed by another. When all of the papers of an examination have been marked, those of each competitor are then for the first time assembled or brought together, his general average is ascertained, his declaration envelope is opened, and the declaration sheet to which he has signed his name is attached to his examination papers. The identity of the competitor, therefore, is not disclosed *until his papers have been marked and reviewed and his general average determined.* The only exception is in marking experience and education, which is done upon the candidate's sworn statement and the answers received to letters of inquiry sent by the Commission to former employers and others acquainted with the competitor. As the charges for specific errors are fixed by the rules for marking, it will be seen that absolute impartiality, accuracy and uniformity are secured in the work.

Appeals from the markings are sometimes made by competitors, but the prospect of securing a higher average by such action is small. Errors on the part of examiners in making charges are seldom found.

The papers of all the competitors in an examination must be marked at the same time, and no competitior's paper will be made special or be marked in advance of others.

RULES FOR MARKING EXAMINATION PAPERS

In subjects for which specific rules of marking are not prescribed, the examiner will usually prepare a scheme of marking for each question, so as to be able to explain his marks in case they are questioned.

All examination papers shall be marked under the following rules:

Mark every correct answer 100

Mark every faulty answer according to its value on a scale of 100, or as specifically directed below, deduct the sum of the error marks of such answer from 100.

When the question requires in the answer a specified number of states, countries, persons, places, locations, or things, the quotient arising from the division of 100 by the number of states, countries, etc., required shall be the credit to be given for each state, country, etc., correctly named. If a greater number is given in the answer than is required, the additional number of states, countries, etc., shall be added to the number required by the question, and the quotient arising from the division of 100 by the number thus obtained shall be the credit to be given for each state, country, etc., correctly named.

RULES FOR MARKING SPELLING	From 100 deduct—
1 For each error in spelling when the exercise consists of 50 words.	2
2 For each error in capitalization (total charge not to exceed 10)..	1
3 For each failure to use the hyphen when required in a compound word	1
4 For each wrong use of the hyphen	1
5 For dividing a word, properly written solid, into two or more parts, each part being a distinct word, or for writing a simple word as a compound word	1
6 For each improper use of the apostrophe	1

RULES FOR MARKING COPYING FROM PLAIN COPY	
1 For each error in orthography	5
2 For each word or figure omitted, repeated, or improperly inserted	5
3 For each word of figure substituted	5
4 For each transposition	5
5 For each abbreviation not in the copy	5
6 For each failure to capitalize according to copy	5
7 For each failure to punctuate according to copy	5
8 For each failure to paragraph according to copy	5
9 For irregularity in left-hand margin	5
10 For misdivision of a word at the end of a line	1
11 For each omission or improper use of the hyphen in dividing a word at the end of a line	1
12 For failure to indent as in copy (only one charge to be made in the exercise)	5
13 For each variation from the printed copy in the use of parentheses brackets or the hyphen	5
14 For each word altered, interlined, or canceled, for each blot, and for each minor erasure, if not neat: *Provided*, That not more than 5 shall be charged for one interlineation or cancellation or for blots	1
15 For failure to indicate, or for improperly indicating, italics, small caps, etc	5
16 For using stenographic period (thus ×), only one charge to be made in the exercise	5
17 For signing name	5
18 For misplacement, want of neatness, etc	3 to 5
19 For entire omission of parentheses at end	10

RULES FOR MARKING COPYING FROM ROUGH DRAFT	
1 For each error in orthography, provided that no charge shall be made for the repeated misspelling of the same word or stem in the same manner	3
2 For each error in syntax, provided that no additional charge shall be made for changes necessarily resulting from a given method of correction or attempted correction	3
3 For each change in tense, number, etc., which does not result in an error of syntax or essential change in the meaning	1
4 For each word omitted, inserted, or substituted involving a test or essential change of meaning (not more than 10 to be charged for the first ten words of each omission, and one for each word thereafter, and not more than 10 for the omission of each indicated insertion)	3
5 For each word omitted, inserted, or substituted involving no test or essential change of meaning, and for each word repeated..	1
6 For each error in capitalization, punctuation, indention, paragraphing, or in division of words	1

	From 100 deduct—
7 For each error in transposition of inclosure	5
8 For each error in transposition of words or groups of words, provided that for a transposition of two words which improves the sentence and involves no test no charge shall be made	3
9 For each abbreviation	1 to 2
10 For each failure to use hypnen when required, or for each wrong use of the hyphen	1
11 For irregularity in left-hand margin	1 to 3
12 For each word interlined or canceled (charge not to exceed 5 for any one interlineation of cancellation), for each blot, and each alteration if not neat	1
13 For stenographic period (as ×), only one charge to be made	3
14 For signing candidate's name	5

RULES FOR MARKING PENMANSHIP

Mark penmanship according to its value on a scale of 100.

In determining the mark on penmanship, legibility, rapidity, neatness, and general appearance, as well as correctness and uniformity in the formation of words, letters, and punctuation marks, will be considered, and the examiners will be guided generally by the following scheme: Perfect, 100; very excellent, 99 to 95; excellent, 95 to 90; very good, 90 to 85; good, 85 to 80; ordinary, 80 to 70; poor, 70 to 65; very poor, 65 to 50. Below the grade of "very poor," 50 to 0.

RULES FOR MARKING LETTER WRITING

In marking the letter, its errors in form and address, in spelling, capitalization, punctuation, syntax and style and its adherence to and treatment of the subject given will be considered, and its value in the judgment of the examiners marked on a scale of 100.

In determining the mark for letter writing, the examiner will be guided generally by the following scheme: Excellent, 100 to 90; good, 90 to 80; fair, 80 to 70; ordinary, 70 to 60; poor, 60 to 50; very poor, 50 to 25; practically worthless, 25 to 0.

RULES FOR MARKING ARITHMETIC

The examiner will prepare a scheme for marking each problem, giving proportional weights to the various steps or processes on the scale of 100. Charges for errors in computation in any step or process will not exceed the weight given such step or process.

No credit will be given for a wrong process.

For errors in work or operation, the following charges will be made:

	From 100 deduct—
1 For error in pointing off decimals in multiplication or division.	25
2 For error in omitting decimal point or in pointing off decimals in addition or subtraction	10
3 For each evasion of a decimal or common fraction test in the solution of a problem	25
4 For each error in computation, provided that in solutions where the possible maximum number of chargeable errors in computation is less than 10 a proportionate charge shall be made for each error	10
5 For error in copying figures from printed question or from work, wrong result being obtained	10
6 For error in copying figures from printed question or from work, right result being obtained	5

		From 100 deduct—
7	For indicating wrong process, but performing correct process	5
8	For each improper use of the symbol or designation ¢ or ₵ in connection with a decimal expression	10
9	For each improper or incorrect designation of a partial or final result	5
10	For failure to indicate the answer in problems by the letters "Ans.," or otherwise, when the answer is obscured by improper arrangement	5
11	For each failure to use the sign $ or £, or any other monetary or commercial sign, or any sign by which the relations of quantities are expressed, when the use of such is required in the statement or solution of a problem	5
12	For each error in denominate numbers in quantity of one denomination contained in a unit of a higher denomination	15
13	For fractions in answers not reduced to lowest terms	5 to 10
14	For an approximate result not sufficiently exact	5 to 10
15	If, when work or operation in full is required, the correct answer is given, but no work is shown	40
16	If, when work or operation in full is required, the process is indicated, but no work or only part of the work is shown	5 to 40
17	For superfluous or irrelevant work not canceled	5 to 10
18	For giving proof instead of solution, according to gravity of error	10 to 75
19	For complex statement process or method, right result being produced	10
20	If, when work or operation in full is required, an approximate answer is given, but no work is shown or indicated, charge 40 for omission of work and deduct from 60 a proportionate charge for number of figures incorrect.	

RULES FOR MARKING STENOGRAPHY EXAMINATION

The stenographic part of this examination consists of an exercise in dictation, containing about 500 words, to be written by the competitor in stenographic characters, which he must then transcribe on the typewriter. Speed and accuracy will be considered in marking this subject, each being marked on a scale of 100; in determining the mark for each exercise, speed will be given a weight of 2 and accuracy a weight of 8. When the accuracy mark in an exercise is less than 50 per cent., no credit will be given for speed.

The transcript will be compared with the printed text from which the dictation was given, and charges will be made for errors under the following regulations:

		From 100 deduct—
1	For each word omitted, added or substituted	1
2	For each word misspelled	1
3	For the use of the plural instead of the singular, or the singular instead of the plural, when the grammatical correctness is not affected, ½; when the grammatical correctness is affected	1
4	For each gross error in capitalization or punctuation	½
5	For each transposition	1
6	For each error in division of words	½
7	For each word repeated	½
8	For each failure to use hyphen when required	½
9	For each abbreviation	½
10	For interlineations, erasures, and lack of neatness	1 to 5

Charges for errors in numerals will be determined by the number of words required to write the numerals.

Time consumed in transcribing the exercise will be marked according to the following scale: If the competitor consumes only twenty minutes in transcribing, he will be credited with 100. When the time consumed is

more than twenty minutes and not more than thirty minutes, one-half of 1 will be deducted from 100 for every minute consumed more than twenty minutes. When the time consumed is more than thirty minutes, 1 will be deducted from 95 for every minute consumed more than thirty minutes.

RULES FOR MARKING COPYING AND SPACING WITH TYPEWRITER

	From 100 deduct—
1 For omission of the general heading	10
2 For error in the right or left position of the general heading or a minor heading as a whole (total charges not to exceed 10)	1 to 3
3 For each variation from copy in the relative position of the parts of a heading or for running into one line a heading that should be in two or more	2 to 5
4 For wrong alignment of a minor heading (total for all not to exceed 5)	3
5 For each minor heading omitted	5
6 For the omission, repetition or transposition of a whole line in table or paragraph	5
7 For each case of erroneous spacing between lines in the table heading or paragraph (only one charge of 5 to be made for uniform error throughout any one of the three parts of the exercise or 15 for uniform error throughout the entire exercise and total charges in no case to exceed 25)	5
8 For erroneous spacing between heading and table or table and paragraph	1 to 5
9 For each error in the relative right or left position of a line	3
10 For each error in the indention of paragraphs	2
11 For each irregular margin to columns	2 to 5
12 For each error in spacing between stub and the first line of colons	3
13 For each error in spacing between other columns and adjacent lines of colons	2
14 For each word, figure or number omitted, inserted, repeated, substituted or transposed	5
15 For each misspelled word or erroneous number	5
16 For each error in spacing between words and punctuation marks, and in spacing between the figures of a number or the letters of a word	2
17 For the insertion of commas after the items of the stub	5
18 For each error in the use of punctuation marks, hyphen or apostrophe in headings or paragraphs	3
19 For each comma or hyphen omitted in numbers and each comma used for a decimal point or vice versa	2
20 For erroneously adding th to date	2
21 For each use of —— for .... or vice versa (total throughout exercise 10)	5
22 For each error in the use of capitals (total for a whole word 5)	3
23 For omission or improper repetition of $ or other signs required by copy	3 to 5
24 For striking one letter or figure over another so that the reading is doubtful (total for one word or number not to exceed 5)	3
25 For erroneous spacing of a dash line (total for exercise 5)	3
26 For each use of i for 1	2
27 For each use of I f or 1, 1 for I or o for 0 (charge for general use of either throughout exercise 5)	1
28 For erroneous length of dash lines, and for errors in colons	1 to 5
29 For erasures and lack of neatness and for each error not specified above	1 to 5

Time consumed will be marked according to the following scale: If the competitor consumes only 20 minutes he will be credited with 100. When the

time consumed is more than 20 minutes and not more than 30 minutes, 1 will be deducted from 100 for every minute consumed more than 20 minutes. When the time consumed is more than 30 minutes and not more than 40 minutes, 2 will be deducted from 90 for every minute consumed more than 30 minutes. When the time consumed is more than 40 minutes, 3 will be deducted from 70 for every minute consumed more than 40 minutes.

RULES FOR MARKING EXPERIENCE

In marking experience the following topics will be considered:

Age.— The examiner will determine standard limits of age most desirable for the position in question. Candidates within those limits will receive the maximum allowance for age, and other candidates will be rated according to their variation from the standard adopted.

Height and weight will be considered for positions requiring physical strength or perfection, charges being made for defect in height from the standard adopted and for any great variation in weight from the recognized standard weight for the height and age of candidate.

Education will be considered for positions reasonably requiring educational attainments above the common-school grade, and will be rated according to its value in the opinion of the examiner.

Experience.— The rating for experience will be based on kind of work done, nature and length of employment, salary or compensation, extent of supervision over others, and other facts called for in application and experience blanks.

Letters of recommendation and certificates of character will be considered *only* when received in response to the inquiry or request of the Commission. Their effect on the rating of the candidate will depend on their contents and the extent to which they corroborate the candidate's own statements.

Every fact called for in the experience statement is important to the examiner, and candidates cannot be too careful to state in detail all important facts of their history.

Failure to satisfy any preliminary requirement of age, height, weight, education, or experience established for the examination in question will disqualify the candidate, and candidates who just satisfy the preliminary requirements will usually be given a minimum standing of 75 per cent.

MEANING OF RELATIVE WEIGHTS

The different subjects in each examination are given relative weights according to their importance. These weights represent the value of each subject in the whole examination. The method of obtaining the general average of a competitor is as follows: Multiply the mark obtained in each subject by the relative weight of that subject, add the products and divide the sum of the products by the sum of the relative weights. The quotient thus obtained will be the general average of the competitor for that examination. No average standing will be computed unless the competitor obtains at least 60 per cent. in each separate subject of the examination.

NOTICE OF STANDING TO COMPETITORS

In order to be eligible for appointment competitors must attain a standing of 60 or over in each subject of the examination and an average standing of 75 or over on the entire examination. If a candidate falls below the required minimum of 60 in any required subject, no rating will be given to his remaining papers.

A notice of standing will be sent to each person examined, whether such person passes or fails to pass. This notice will be sent as soon as practicable after the papers are marked. Letters inquiring how soon the papers will be marked only serve to delay the work.

If the papers of a competitior who makes an eligible average are not complete in every particular the name of such competitor will not be entered

upon the eligible register nor notice of standing sent until the papers are completed.

In alleged cases of collusion the names of the persons suspected will not be entered upon the eligible register, should they make an eligible average, nor notices of standing be sent, unless, after thorough investigation, the charge of collusion is not sustained.

INSPECTION OF PAPERS AND APPEAL

After the rating is completed a competitor may, in person or by duly authorized agent, inspect his examination papers in the presence of any officer of the Commission, and if, in his opinion, injustice has been done him, he may within fifteen days after receipt of notice of standing, appeal to the Commission. The appeal must be in writing and must specify exactly and in detail on what subjects of examination and what answers or parts of answers he claims to have been unfairly rated with full reasons in each case, statement of authority for answer claimed to be correct, etc. No appeal will be considered unless this is done. Attention is called to the rules for marking contained in this leaflet. Appeals properly presented will be considered by the Commission, and, if necessary, it will direct the revision of the appellant's marking, or otherwise do justice in the premises.

TERM OF ELIGIBILITY

Eligible lists may continue in force from one to four years. Every list must be kept in force for one year unless sooner reduced to less than three eligibles ready and willing to accept appointment. Certain lists for specified positions must be kept in force for two years under the same condition. Any list, except a promotion list, will be continued in force beyond the one or two year period up to a maximum of four years, unless a new list for the same position is sooner established. Eligible lists for promotion are limited to one year.

VETERAN PREFERENCE

The only persons entitled to preference *in appointment* as veterans are "honorably discharged soldiers, sailors and marines from the army and navy of the United States in the *late civil war* who are citizens and residents of this state." Veterans of the Spanish war and veteran volunteer firemen have the same right to a hearing before removal as do veterans of the civil war, but they have *no preference in appointment.*

The preference granted to *civil war veterans* does not give them any advantage in their examinations or in the rating of their papers. They must take the same examinations and attain the same standing as other persons in order to be eligible for appointment. When their names are placed on the eligible list they are entitled to be certified and appointed before other persons, though such other persons may have been rated higher in their examinations. See sections 20 and 21 of the Civil Service Law, chapter 370 of the Laws of 1899.

PROSPECT OF APPOINTMENT

Except as indicated in this paragraph, it is not possible to estimate the prospects of an eligible for appointment, and attempts to predict when names might be reached for certification would be certain to result in disappointment. The law requires examinations to be held, but the passing of an examination does not insure either certification or appointment. The conditions of appointment in the various branches of the service are such that nothing can help and nothing can hinder the certification of a name in the order of its standing on a register. As the highest possible mark is 100 and the lowest that gives eligibility is 75, it follows that the nearer a mark is to 100 the more likely it is that the person may be reached for certification within the period of eligibility. There are usually on the registers

more eligibles having ordinary qualifications than are required for appointment.

For the information of applicants the Commission mentions the following positions as those for which it has been unable to secure sufficient qualified eligibles: Architectual draughtsman, assistant civil engineer, assistant steam engineer, bridge designer, bridge draughtsman, leveler, male officer, physician, rodman, stenographer in hospitals and institutions, trained nurse, woman officer. Persons willing to accept such positions have excellent chance of appointment if successful in passing the examination.

Entrance to the service is usually in the lowest grades, the higher grades being filled generally by promotion. The prespect of promotion varies so much in the different departments that no specific information on the subject can be given.

TRANSFER

A person regularly appointed from eligible lists may be transferred to similiar positions in the same grade in another department, but the Commission *cannot arrange for* or assist in procuring such transfers, nor does it keep an *eligible list* of persons desiring transfer.

PREPARATION FOR EXAMINATION

Special and technical examinations should be entered only by those who have the proper training and experience to fit them for the work to be done. The Commission cannot recommend schools of instruction or textbooks for preparation for examination. Special instruction will be useful in elementary subjects, but most special examinations presuppose some experience and training in work similar to that of the position to be filled. The reports and other publications of public departments furnish much information regarding the work of the public service.

Candidates will find in this pamphlet, in the circular issued prior to each examination and in the leaflets mentioned below all the information that can be given concerning the scope and subject matter of examinations. Leaflets will be issued containing the schemes and preliminary requirements for the following groups of positions, with specimen questions of the more important examinations:

A. Clerical positions.
B. Special agents.
C. Messengers and custodians.
D. Institution positions for men.
E. Institution positions for women.
F. Steam and electrical engineering positions.
G. Architectural positions.
H. Agricultural positions.
I. Medical positions.
K. Educational positions.
L. Civil engineering positions.
   Chainman.
   Highway Inspector.
   Inspector of Masonry.

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New York State Civil Service Commission

EXAMINATIONS FOR SPECIAL AGENTS

The different subjects in each examination are given relative weights according to their importance. These weights represent the value of each subject in the whole examination. The method of obtaining the general average of a competitor is as follows: Multiply the mark obtained in each subject by the relative weight of that subject, add the products and divide the sum of the products by the sum of the relative weights. The quotient thus obtained will be the general average of the competitor for that examination. No average standing will be computed unless the competitor obtains at least 60 per cent. in each separate subject of the examination.

Unless otherwise stated candidates must be at least 21 years of age, citizens of the United States, and residents of New York State.

Requests for application blanks for any position must be sent to Chief Examiner, State Civil Service Commission, Albany, N. Y.

REQUIREMENTS AND SPECIMEN QUESTIONS

Bank Examiner. $8 to $10 a day when employed. Subjects of examination and relative weights: Questions relating to banking law and practice, examination of banks and other institutions subject to the banking law, 5; rapid computation, 2; experience, education and personal qualifications, 3.

Specimen questions

1 *Law and duties.*—1 Name the classes of institutions under the supervision of the Banking Department. 2 What are the duties of a bank examiner? 3 State with greatest possible brevity what, in your judgment, should be the principal rules of conduct of a bank examiner in the discharge of his official duties. 4 What is a bank? An individual banker? A private banker? 5 What are the resources of a bank? The liabilities? Is the capital of a bank an asset or a liability? 6 How would you prove the financial statement of a bank? 7 (a) Name the necessary and proper books for a bank to have. (b) Name the necessary and proper books for a trust company to have. 8 What would be your manner of procedure in the examination of a discount bank? Give the details, step by step. 9 What are re-discounts? 10 (a) What is the limit set by law, if any, of a loan by a bank or trust company to any one person, firm or corporation? (b) May a bank lawfully loan on the security of its own stock? 11 (a) What per-

centage of lawful money reserve must a State bank located in a city of 800,000 inhabitants or more have? (b) If located elsewhere, what percentage must it have? 12 (a) What is "lawful money of the United States" in which a bank is required to keep its reserve? (b) What is required of the bank when its reserve falls below the required minimum? 13 May a trust company invest in the stocks of private corporations? If so, to what extent? 14 Suggest conditions concerning paper held by a bank which should cause an examiner to question the paper. 15 How would you prove the correctness of the amount stated by a bank or trust company to be due depositors? 16 (a) What is the general purpose and business of a savings bank? (b) What, if any, capital stock must a New York State savings bank have? (c) What is the surplus of a savings bank? 17 State the general purpose and business of what is usually termed a "building and loan association." 18 What is meant by charging a premium for a loan in what is usually termed a "building and loan association?" Describe the forms of premium used by such association: 19 Can a period of maturity for the shares of such an association be legally guaranteed? Give reasons. 20 The statement of a bank located in New York City shows the following: Due from approved reserve agents, $60,000; due from other banks and bankers, $30,400; specie, $5,996; U. S. legal tenders and circulating notes of national banks, $20,429; other cash items, $18,153; due depositors on demand, $548,144; due trust companies, banks and bankers, $17,420; due savings banks, $19,725. What is the state of its lawful money reserve and of its cash reserve? Show all computation in full.

2 *Rapid Computation.*—Time allowed, fifteen minutes. 1 Add this column:

$10,433	27
54,125	77
223,215	22
3,737,869	31
67,325	47
1,123,768	94
473,213	18
107,750	91
224,562	50
7,897,798	43
113,868	00
9,181	23
10,400	00
2,329,463	29
9,897,743	43
4,213	00
729,687	24
413,333	33
6,666,666	66
21,444	44
366,917	29
233,411	18
125,916	68

2 Calculate and enter the market value of securities whose par value is stated in the first column, and which sell at the market rate indicated.

Par value	Market rate	Market value
10,775	106	
100,000	105⅜	
1,750,000	95¼	
110,000	107⅞	
107,700	113 4-5	
99,787	103½	
12,348	132¼	
10,000	109⅛	
1,332,644	99 1-6	
2,000,000	79⅞	

Deputy Factory Inspector. $1,000 to $1,200. Open to men and women. Subjects of examination and relative weights: Arithmetic (fundamental rules, fractions, decimals and measures), 1; questions on laws relating to the Department, 2; questions on the nature and methods of factory and tenement house inspection, preparation of reports, etc., 5; experience and education, 2; In marking experience due weight is given to age and to experience in mechanical trades, in the operation of factories or mills or any other employments especially related to the work of the position, and to ability to speak languages other than English. Spelling, handwriting and manner of expression are considered in marking the papers but do not constitute separate subjects. The bulk of the work of the Department is in the tenement house districts of the large cities and involves constant climbing of stairs, exposure to weather and unusual exposure to disease. In order to ensure ability to work under these conditions, candidates are given a medical examination by the Commission's examiners.

Specimen questions

1 *Arithmetic.*—Add the following: $781,947.19; $40,255.81; $59,748.60; $57,137.50; $129,640.05; $91,187.77; $58,076.59; $175,263.26; $66,553.63; $60,739.55; $45,573.01; $825,963.21. 2 A room in a factory is 65.5 feet long, 36 feet wide and 12½ feet high. How many cubic feet in the room? 3 Fresh air enters a room through an opening 8x14 in. with a velocity of 5 ft. per second. At this rate how many cubic feet of air would enter the room in an hour? 4 A company employs 17 laborers at $1.50 per day; 28 mechanics at $3.60 per day; 9 teamsters at $2.25 per day; 2 bookkeepers at $15 per week and a superintendent at $1,560 per year. What is the weekly payroll of the company? 5 It required 24 days to lay a sewer; one-third of the time was used in digging; one-sixth in laying; one-twelfth in filling, and the remainder in repaving. How many days were given to repaving?

2 *Factory law.*—1 Define the following terms as used in the labor law: factory, employer, employee, minor, day's work. 2 State the law regarding the payment of wages by employers. 3 When females are employed in factories what provisions must be made for their benefit? 4 What portion of the domestic relation law is it the duty of the factory inspector to enforce? 5 What must a certificate for employment issued to a minor contain? 6

What is the law regarding the inclosure and operation of elevators and hoisting shafts? 7 State the law regarding fire-escapes. 8 What are the duties of the factory inspector in relation to (a) inspection of bakeries? (b) inspection of mines?

3 *Factory inspection.*—1 Write a report addressed to the factory inspector of a violation of the law regarding the employment of minors. 2 How many persons would you allow to be employed during the day-time in a room 50 feet long, 25 feet wide and 15 feet high? 3 Draw an affidavit charging John Doe with the unlawful use of his dwelling-house for manufacturing purposes. 4 Draw an order to be served upon Richard Roe requiring him to properly ventilate a workroom. 5 Describe briefly your method of inspecting a paper box factory three or more stories in height. 6 Suppose a report of an accident in a factory was referred to you for investigation, what would you do? 7 What would you do should you discover a case of scarlet fever in a factory while making an inspection? 8 Would you consider it your duty, as a deputy factory inspector, to enforce an ordinance of a city requiring certain factories to keep pails filled with water in each workroom for use in case of fire?

Inspector, State Board of Charities. Salary for men, $1,200; for women, $900 to $1,200. The duties of inspector are the visitation and inspection of charitable institutions and agencies and the preparation of accurate reports based on such inspection. Candidates must be graduates of a high school or equivalent, and should have some knowledge of the theory and practice of modern charity in its application to the various classes of dependents. Subjects of examination and relative weights: Letterwriting and preparation of reports, 2; questions on the laws and constitutional provisions relating to charities and the State Board of Charities, aims and methods of inspection, 5; education, experience and personal qualifications, 3.

Specimen questions

1 *Letterwriting and preparation of reports.*—1 Write a letter to the State Board of Charities, Albany, N. Y., stating your training and experience and other qualifications for the work of an inspector. 2 Write a full report of an inspection of an orphan asylum containing 300 children, assuming grave abuses are discovered, and that the equipment is found to be insufficient and the sanitary condition unsatisfactory. Assume all other facts needed.

2 *Laws and methods.*—1 Briefly outline the powers and duties of the State Board of Charities as defined in the Constitution and Laws of the State. 2 Indicate the general methods adopted by the State Board of Charities in the performance of its duties, and state the advantages, if any, of its system of inspection, giving reasons therefor. 3 Give a classification of delinquents, dependents, and defectives, and explain how each is cared for in this State. 4 What method should an inspector follow to determine the exact condition of an institution for the care of 200 or more children? 5 (a) What is meant by the "placing out" of children? What children should be placed out, and what can you say of the beneficial effects of the "placing out" law? (b) What is meant by the term "settlement" as used in the Poor Law, and how is a settlement acquired? 6 State briefly the provisions of law relating

to dispensaries and their supervision and control, also of the rules relating to dispensaries prescribed by the State Board of Charities. 7 Name the State charitable institutions, and state briefly their functions, organization, and the relation to them of (1) the county superintendents of the poor, (2) the courts, and (3) State departments or boards.

Special Agent, Department of Excise. $1,000 to $1,500. Open to men only. Candidates must not have been engaged in the manufacture or sale of malt or spirituous liquors within two years prior to the time of application. Subjects of examination and relative weights: Spelling, 1; writing from memory the substance of orders dictated orally, 2; handwriting, 2; arithmetic (fundamental rules, fractions and United States money), 1; liquor tax law and questions on the duties of the position, including letterwriting and preparation of reports, 2; age, education, experience and personal qualifications, 2.

Specimen questions

1 *Spelling.*—Fifty words of more than average difficulty:

credible,	excess,	receiver,	fascination,	episode,
exemption,	colossal,	vicissitude,	fortieth,	theatrical,
contentious,	zoologist,	enthusiasm,	vicious,	Pennsylvania,
leisurely,	novice,	interrupt,	remuneration,	apology,
adaptable,	eccentric,	collateral,	terse,	croquet,
phases,	influential,	remittance,	reticent,	grievance,
damageable,	incessant,	confusion,	engineering,	efficacy,
infallible,	impartial,	guardian,	consensus,	eligible,
intention,	incisive,	colloquy,	successive,	trafficking,
concede,	replete,	affording,	economy,	volunteer,

2 *Verbal orders.*—There are three orders. Each will be read separately and time allowed for writing it before the next is given. The order will be read at a moderate rate of speed once only. The candidate is required to write the substance of the order, not necessarily the exact language.

1 If a telegram for Mr. Collins arrives this afternoon have it forwarded to him at the Morgan House, No. 45 West 118th St., New York.

2 On your way to the post office this noon stop at the Remington typewriter agency and ask them to send a man to repair a typewriter in this office as soon as possible.

3 Look up the details of this complaint against James Brown, and then go to Rochester and make a careful investigation in regard to all the facts charged against him.

3 *Arithmetic* In solving problems the entire process and computation must be given. 1 A man having $100 travels for a week (7 days). He spends $5.69, $4.75, $6.92, $7.38 and $5.95 for car fare. He pays for three meals a day at an average cost of 79 cents a meal, and lodging for three days at $1.75 a day, and four days at $2.25 a day. His incidental expenses are $6.88. How much money has he left at the end of the week? 2 The distance from New York to Buffalo is 440 miles, to Syracuse 291¼ miles and to Albany 143½ miles. How far will a man travel who goes from Albany to Buffalo and back to Syracuse? 3 In a certain county the net receipts for

one year under the liquor tax law was $5,254,684.87; the total number of certificates in force was 7,286. Find the average income from each certificate. 4 Find the net revenue in each of the following counties:

	Total amount received	Fees paid	Rebates paid
Albany	$2,181,842 44	$21,818 42	$114,995 06
Allegany	62,085 72	1,862 58	2,076 70
Broome	367,680 71	7,353 60	18,516 93
Cattaraugus	234,408 69	4,688 16	10,680 41

5 The county's share of the receipts is two-thirds of the whole amount collected. Find the whole amount when the county receives $45,685.05.

4 *Law and duties.*—1 In what places is traffic in liquors prohibited by law? 2-3 Give the various grades of taxes assessed on the different forms of traffic in liquors. 4 What classes of persons, corporations, associations, etc., are prohibited from trafficking in liquors? 5 To what classes of persons shall liquor not be sold or given away? 6 Give with reference to special agents their (a) powers, (b) duties, (c) salary. 7 At what times is the sale of liquor forbidden in (a) saloons, (b) hotels? 8 What in general constitute misdemeanors under the liquor tax law? 9 Assuming that a special agent finds that gambling is regularly carried on in a licensed saloon, explain fully the proper procedure on the part of the special agent and other public officers in order that the law be properly enforced. 10 Assuming that you are sent to inspect a saloon against which complaints of Sunday selling have been made, explain fully how you would proceed. 11 Assuming that you have secured positive evidence that the saloon which you were sent to inspect is selling liquors on Sunday, write a full report of your inspection to the State Commissioner of Excise. 12 What should an expense account contain? Write in proper form an expense account of a special agent covering four days work, each day being spent in a different city.

RULES FOR MARKING EXPERIENCE

In marking experience the following topics will be considered:

Age.—The examiner will determine standard limits of age most desirable for the position in question. Candidates within those limits will receive the maximum allowance for age, and other candidates will be rated according to their variation from the standard adopted.

Height and weight will be considered for positions requiring physical strength or perfection, charges being made for defect in height from the standard adopted and for any great variation in weight from the recognized standard weight for the height and age of candidate.

Education will be considered for positions reasonably requiring educational attainments above the common-school grade, and will be rated according to its value in the opinion of the examiner.

Experience.—The rating for experience will be based on kind of work done, nature and length of employment, salary or compensation, extent of supervision over others, and other facts called for in application and experience blanks.

Letters of recommendation and certificates of character will be considered *only* when received in response to the inquiry or request of the Commission.

Their effect on the rating of the candidate will depend on their contents and the extent to which they corroborate the candidate's own statements.

Every fact called for in the experience statement is important to the examiner, and candidates cannot be too careful to state in detail all important facts of their history.

Failure to satisfy any preliminary requirement of age, height, weight, education, or experience established for the examination in question will disqualify the candidate, and candidates who just satisfy the preliminary requirements will usually be given a minimum standing of 75 per cent.

SPECIAL EXAMINATIONS.

There are occasional special and technical positions in which vacancies are of infrequent occurrence and for which examinations are held only when vacancies occur. As to such examinations no detailed information can ordinarily be given in advance of the advertisement of examination. For most of these positions the examination consists entirely of questions upon the duties of the position, the technical knowledge required for their performance, and the experience, education, special training and personal qualifications of candidates. A partial list of such examinations held in the past is given below. *No specimen questions for such examinations can be furnished,* nor will the subjects of examination and relative weights necessarily be the same in future examinations of similar character, as the Commission will be governed by the immediate needs of the service at the time the examinations are called.

Boiler inspector, department of public works. $3,000. The duties consist of the inspection of the boilers and engines of vessels plying the lakes, canals, rivers and other State waters, and the examination and licensing of engineers of such vessels. Subjects of examination and relative weights: practical questions on the construction, operation and inspection of marine boilers and engines, gasoline and other motors, and on the examination of engineers, 6; experience and education, 4.

Chief of bureau of statistics and information, Department of Agriculture. $1,500. Open to men only. The duties of the position are to direct the operation of the bureau to be established for collecting and disseminating information relative to agriculture and to supply the need of the state for farmers and farm laborers and in particular to locate in this state immigrants of the classes best suited to our agricultural conditions. Subjects of examination and relative weights: Letterwriting and questions relating to agricultural resources, industries and conditions, and social conditions in the rural sections of this state, general knowledge of agricultural industry and classes of immigrants from the various countries from which immigrants come to the United States, ways and means for conducting the bureau and making it of service to the state, etc., 6; experience, including age, education, previous employments, efficiency, habits, character, 4.

Detective agent, comptroller's office. $1,200. Subjects of examination and relative weights: The detective law and the powers and duties of peace officers, 5; experience, 5.

Deputy mine inspector, state labor department. $1,200. Candidates should have had practical experience in mining. Subjects of examination and relative weights: Arithmetic, 1; laws relating to the department of labor and inspection of mines and quarries, 3; mining and mine inspection, including the preparation of letters and reports, 3; experience, 3.

Examiner of State hospital accounts. $8 a day when employed. Subjects of examination and relative weights: Questions on accounting and examination of accounts, with special reference to state hospital accounts, 7; experience, 3.

Gas meter tester. Department of state inspector of gas meters. $3.50 a day. Candidates must be competent mechanics and will be examined as to their experience, knowledge of gas meters, ability to read meters, etc.

Inspector, education department. Open to men only. $1,800. Candidates must have had not less than three years' successful experience as teachers in the public schools of New York state. Subjects of examination and relative weights: Professional examination--methods and principles of education, school economy (including school hygiene, school management, buildings, equipment, etc.), school law, and special duties of the position, 4; scholastic examination—American history and civics and English, 2; experience and education, 4. In addition to the subjects included in the scholastic examination above, candidates will be required to *pass* an examination with a standing of 75 per cent. or over in *one* of the following groups of subjects: 1 Mathematics—arithmetic, algebra, geometry. 2 Latin—Caesar, Virgil, Cicero. 3 German, covering two years' work. 4 English and American literature. 5 Sciences—physics, botany, physiology. Candidates should notify the commission of their choice of one of these groups at the time of application.

Inspector of gas and electricity. $1,200 to $2,000. The duties of this position are to inspect and test gas and electricity supplied throughout the state and to examine the methods of their manufacture and distribution. Candidates should be graduates in mechanical or electrical engineering of duly established schools of technology and should have had at least two years experience in work related to the duties of the position. Subjects of examination and relative weights: Gas, including manufacture, distribution, methods of testing chemical composition, candle power and calorific value, methods of testing gas meters, etc., 3; electricity, including generation, distribution, electric measurements, methods of testing electric meters, etc., 3; education, experience and special training, 4.

Inspector of locomotive boilers, state railroad commission. $3,000. The duties of the position are to inspect and test boilers of locomotives used by railroad corporations operating steam railroads within the state. Subjects of examination and relative weights: Practical questions on the methods of testing and construction of locomotive boilers and the duties of the position, 6; experience, education and special training, 4.

Inspector of records and accounts, state board of charities. $1,200 to $1,400. Open to men only. The duties of this position are to examine the records

and accounts of charitable institutions, societies and agencies, to prepare accurate reports of such examinations, to draw up suitable forms for keeping records and books showing the charitable work and financial transactions of state charitable institutions, almshouses, homes for women, hospitals, dispensaries and other benevolent institutions, and to make inspections and reports upon the general work of such institutions when required. Candidates should have some knowledge of the theory and practice of modern charity and a detailed acquaintance with the work of charitable institutions and societies in this state, in addition to a thorough knowledge of the practice and methods of bookkeeping, accounting and auditing. They should also be familiar with modern office systems and methods of cataloguing. Subjects of examination and relative weights: Arithmetic, 1; letterwriting and preparation of reports, 1; questions on the organization and work of charitable institutions, 1; bookkeeping, accounts and office records, 4; education and experience, 3.

Inspector, state board of pharmacy. Open to men and women. A vacancy exists in the staff of the eastern branch of said board. Names will be certified for other similar vacancies as they occur. Subjects of examination and relative weights: Laws relating to the state board of pharmacy, objects and methods of inspection, etc., 7; experience, education and personal qualifications, 3.

Lecturer, education department. $2,500. The duties are to act as lecturer and instructor for the education department at farmers' institutes and other duties connected with the inspection and examination work of the department as assigned. The positions require men of sound scholarship, college graduates preferred, with practical experience in teaching, familiarity with courses of study and details of management of both elementary and secondary schools, ability to inspect and judge accurately the work in all grades of schools, and adaptability and experience to speak in public and represent the department at the institutes. Subjects of examination and relative weights: Methods and principles of education school economy (including school hygiene, school management, buildings, equipment, etc.), school law, history of education, special duties of the position, 5; experience, education and personal qualifications, 5.

Special agent, department of public works. $4 a day. Subjects of examination and relative weights: Spelling, 1; arithmetic (fundamental rules, fractions, interest and percentage), 1; copying from plain copy, 1; letterwriting, 1; business law and the laws, rules and regulations governing the department of public works, 4; experience, education and personal qualifications, 2.

Sub-inspector of public libraries, education department. $1,200. Open to men and women. Candidates should have both college and technical library education, good address, and ability to speak in public upon library affairs. Subjects of examination and relative weights: Library work, including cataloguing, indexing, classification, library economy and bibliography, state library law, Regents' ordinances affecting public libraries, museums, study clubs, and extension teaching, the general theory of the scope of public

libraries, their relation to schools and place in the social system, 7; education, experience and personal qualifications, 3.

Superintendent of inspection, state board of charities. $2,500. Subjects of examination and relative weights: Questions and discussions on laws relating to public and private charities, the history, functions and conduct of such charities and their relations to the state board of charities, 7; experience, education and special training, 3.

Superintendent for placing dependent children, Onondaga county. Open to women residents of Onondaga county only. Subjects of examination and relative weights: Spelling, 1; letter writing and preparation of reports, 2; copying from plain copy, 1; arithmetic (fundamental operations, fractions and United States money), 1; questions on the duties of the position, 3; experience, education and personal qualifications, 2.

Traveling agent, department of agriculture. Employed a portion of the year only, at $2.50 a day and expenses, to collect samples of food stuffs fertilizers on sale in this state. Subjects of examination and relative weights: Spelling, 1; copying from plain copy, 1; letter writing, 1; penmanship, 1; arithmetic (fundamental rules, fractions and United States money), 1; geography (routes of travel) of New York state, 3; experience and personal qualifications, 2.

See also Leaflet H for similar positions in the department of agriculture.

State Civil Service Commission

EXAMINATIONS FOR EDUCATIONAL AND LIBRARY POSITIONS

The different subjects in each examination are given relative weights according to their importance. These weights represent the value of each subject in the whole examination. The method of obtaining the general average of a competitor is as follows: Multiply the mark obtained in each subject by the relative weight of that subject, add the products and divide the sum of the products by the sum of the relative weights. The quotient thus obtained will be the general average of the competitor for that examination. No average standing will be computed unless the competitor obtains at least 60 per cent. in each separate subject of the examination.

Unless otherwise stated candidates must be at least 21 years of age, citizens of the United States, and residents of New York State.

Requests for application blanks for any position must be sent to Chief Examiner, State Civil Service Commission, Albany, N. Y.

Teacher, state institutions. $360 to $720 and maintenance. Open to both sexes. Candidates must hold a second grade certificate to teach in the public schools of the state or equivalent. These positions are exclusively in state institutions of a charitable or correctionary nature, such as the State Industrial School, Houses of Refuge, State School for the Blind, etc., and the incumbents of the different positions are often required to have a knowledge of a special subject, such as vocal and instrumental music, kindergarten work, typewriting, gymnastics, and physical culture, etc. Subjects of examination and relative weights: Spelling, 2; methods and school economy, 2; geography, 2; English grammar, 2; arithmetic, 2.

Specimen questions

Spelling.— Fifty words of average difficulty in common use. The examiner will first pronounce the word, then define it or exemplify it in a sentence, then pronounce it again, after which the competitor is required to write the word on the spelling blank. The competitor should not write the definition, nor should he begin words with capitals unless they are proper names.

abolish	durable	effigy	medicate	illegible
balloon	callous	citation	variance	criticise
heinous	fascinating	specimen	rarity	elementary
piracy	secession	erroneous	forfeit	delineate
caucus	apparel	revenue	economy	veteran
tenure	annuity	judgment	homage	vacillating
civilian	circuit	evasion	nicety	novelist
stupefy	warrant	serviceable	efficient	emigrate
libelous	delegate	hideous	almanac	baptism
discrepancy	coercion	emotion	changing	deprecate

Methods and school economy.— 1 Give reasons for and against having a set of rules for the government of a school. 2 State two important purposes of review work. 3 By what considerations should the promotion of pupils be determined? 4 What are the principal purposes of nature study? 5 What advantages are derived by a school in having the surroundings neat and attractive? 6 How should the seating of pupils be arranged in an ungraded school? Give reasons for your answer. 7 Describe a good method of teaching elementary reading. 8 Illustrate correlation in teaching and show its purpose.

Geography.— 1 Name and account for the different seasons in the (a) torrid zone, (b) temperate zones. 2 Mention the leading industry of (a) Newfoundland, (b) Cuba, (c) Transvaal, (d) southern Russia. 3 Explain the phenomena of the tides. Where do the highest tides occur? Give reason. 4 (a) Name the states that border on the great lakes. (b) Locate four of the principal lake ports in these states. (c) Mention the principal exports from these ports. 5 Describe the form of government of (a) Servia, (b) Porto Rico, (c) India, (d) United States of Columbia. 6 Locate each of the following and state a fact of interest in regard to each: Manchuria, Bulgaria, Isthmus of Panama, Chautauqua, Mount Blanc. 7 Mention three localities that produce sugar cane, and two that produce cotton in large quantities. 8 Account for the climate of (a) Patagonia, (b) Newfoundland, (c) Ireland, (d) southern California.

Grammar.— 1 Analyze the following sentence by diagram or otherwise: In their anxiety to be without a master the states left themselves without a government.— *Johnston.* 2 Express the thought of the sentence quoted in question 1 in three other ways. 3 Write the possessive plural of the following: hero, aldermen, deer, it, who, Miss Wheeler, attorney-general, Musselman, son-in-law, mouse. 4 Name, define and exemplify three kinds of complements that verbs may take. 5 Write original sentences containing (a) a noun used adverbially, (b) an absolute phrase, (c) a clause of cause, (b) *but* used as an adverb. 6 Give the syntax of the dependent clause and of the italicized words in the following: Depend upon it *there* is now truer duty *to be done* in raising harvests *than* in burning them.— *Ruskin.* 7 Classify as to form and meaning the sentences quoted in questions 1 and 6. 8 Select from the following the incorrect sentences and rewrite in correct form, giving the reason for each correction: (a) Neither the maple nor the oak are now standing. (b) 'Tis better that the enemy seek us. (c) I insist upon knowing who you sent. (d) I fear we will be late. (e) Who knows but what we may fail?

Arithmetic.— N. B.— In solving the problems the entire process and computation must be given. 1 A man had a yard 38 feet long and 27 feet wide; he reserved two grass plots, each 8 feet square, and had the rest paved with stone, at 45 cents a square yard; what did the paving cost? 2 A person owned ⅝ of a mine, and sold ¾ of his share for $1,710; what was the value of the entire mine? 3 How much will it cost to make an excavation 40 feet long, 30 feet wide, and 9 feet deep, at 32 cents per cubic yard? 4 What sum, at 4 per cent. simple interest, will amount to $221.07 in three years, 4 months? 5 A peddler bought 491 yards of cloth at 81 cents a yard; he spoiled 29 yards, and sold the rest at 95 cents a yard; did he gain or lose and how much? 6 A store was insured for $12,000 at the rate of ¾ per cent., and the goods for $15,000 at 1¼ per cent.; what was the entire premium? 7 If the cost of erecting a $38,000 building is assessed upon $325,000 capital stock, what must a stockholder pay who owns 100 shares at $100 each? 8 What is the difference in rate of income on investment between 3 per cent. stock quoted at 104, and 4 per cent. quoted at 93? 9 A man divided $3,150 between his four sons so that each received $100 more than the one next younger; how much did each receive? 10 A grocer sold 50 bbls. of wine, each containing 31 gal. 2 qts., at $2.40 a gallon, receiving a note at 90 days; what would be the proceeds of this note, discounted at a bank at 7½ per cent. per annum?

Library assistant. $600. Open to both sexes.

Specimen questions

Cataloguing, subject indexing and classification.— 1 Would you enter Charles Dudley Warner's "American Men of Letters" under editor or title, and why? 2 Catalogue the first fifteen volumes of the "Annual Report of the Civil Service Commission of New York State." 3 Give form of entry for any periodicals,

such as Harper's New Monthly. 4 In what cases would you make title cards? 5 Give rule for the form of entry of "An English Nobleman." 6 How would you catalogue an anonymous book whose author had been found? 7 Give subject headings with "See" and "See also" reference for any six of the following books: Lamb, "Tales from Shakespeare;" George, "Progress and Poverty;" Davis, "Cuban and Porto Rican Campaigns;" Worcester, "Philippine Islands;" Nordau, "Degeneration;" Jameson, "Characteristics of Women;" Campbell, "Prisoners of Poverty;" Rousseau, "Emile." 8 Give class numbers for the following books: "Geology of Greenland;" "Statistics of Births and Deaths in Berlin in 1894;" "Travels in Hungary;" "Life of Napoleon;" "Latin Grammar;" "Japanese Home Life;" "United States Colonial Expansion;" "Constitutional History of the United States;" "Literature of Holland;" "Elections in New York City;" "Gazetteers of Boston;" "Folk Tales of Scandinavia;" "List of Books on the Commerce of Ancient Rome."

Library economy, bibliography and handwriting.— 1 Outline a charging system desirable for a small public library. 2 How were the "Cutter Tables" formed and what is their use? 3 Give plan for the order department of a small public library. 4 Mention several books valuable for ready reference. 5 Do you approve of "open shelves," and why? 6 Do you favor a dictionary or classed catalogue, and why? 7 Mention the best aids for cataloguing American and English anonymous books. 8 Mention five good general bibliographies. 9 Mention two valuable bibliographies of scientific publications. 10 Mention one good bibliography each for English, American, German, French and Italian books. 11 Describe Graesse and Brunet. 12 Mention a good bibliography of early printed books. 13 Name bibliographies you would consult in making a list of books on American history. 14 Give a short sample of your ordinary handwriting and the library hand you have acquired.

Examiner, Education Department. Open to men and women. These examinations are held to provide eligible lists for permanent appointment at salaries of $720 to $900 and also to provide for a considerable number of temporary examiners required during the summer months at salaries from $60 to $100 a month. Candidates must be graduates of a high school or have an equivalent education according to the standard of the department and must have had at least three years' experience in teaching. Subjects of examination and relative weights: Written examination in groups of subjects selected by applicant from list given below, 8; education and experience, 2. The scope of examination in each group of subjects in indicated by the Regent's syllabus. Candidates may take examination in one or more groups specified in the same application, but may not take more than one group on the same date.

Group 1. English language and literature.
2. Modern languages (French, German, Spanish). Candidates are required to qualify in two of these languages to be specified in the application.
3. Ancient languages (Latin and Greek). Latin will be given a weight of 75 per cent. and Greek a weight of 25 per cent. in the rating.
4. Mathematics (arithmetic, business arithmetic, algebra, plane and solid geometry, plane and spherical trigonometry).
5. Sciences (physics, chemistry, physical geography, botany, physiology and hygiene). Candidates are required to qualify in three sciences to be named in the application.
6. History (United States, New York State, English, modern European and ancient). Candidates are required to select and answer a certain number of questions from a paper covering all these topics.
7. Civics and economics.
8. Pedagogy (school law, methods school economy, history of education, art of questioning).

Specimen questions

Group 1 *English language and literature.*— When a choice is allowed the candidate in any of the following questions, if more than one answer is given *only the first* answer written will be considered. 1 Discuss the method in which each of the following topic sentences should be developed into a paragraph and the arrangement of the sentences within the paragraph: (a) I visited to-day an ideal school house. (b) The good, it is said, die young. 2 (a) Mention and illustrate the different methods of forming an interrogative sentence in English. (b) What kinds of subordinate clauses may be introduced by interrogative words? Illustrate. 3 Criticise in detail the following paragraph. Specify the chief fault and minor errors, give technical names of errors as far as you are able. "After a long and toilsome ascent we reached the summit of the hill, where we obtained, a magnificent view of a lovely fertile smiling valley dotted here and there with the white residences of farmers tastily surrounded with maples, and just below where we stood ran a swift stream on which stood a large mill, turned by an old-fashioned water-wheel, one of the kind that can afford to utilize only a small quantity of the water-power because there is such abundance of power already running to waste." 4 Rewrite the paragraph correcting the faults you have criticised.

5 "In the afternoon they came unto a land
In which it seemed always afternoon
All round the coast the languid air did swoon,
Breathing like one that hath a weary dream.
Full-faced above the valley stood the moon;
And *like* a downward smoke, the slender stream
Along the cliff to fall and *pause* and fall did seem."

Underline the figurative expressions in the above quotation and in regard to each explain: (a) What idea the poet intended to illustrate by the figure, (b) In what the point of the comparison lies. 6 Give the syntax of the words italicized on question paper in the quotation given in number 5. 7 (a) Mention three requirements of good diction. (b) Give two rules to be observed in narration not applicable to other forms of composition. 8 Explain the meaning of the following expressions and the effect of each upon an author's style: (a) "fine writing;" (b) idiomatic expressions; (c) periodic sentence; (d) anti-climax; (e) epithet. 9 Write the scansion of the following lines and give the prevailing foot and meter of each selection: (a) First two lines of the quotation in number 5.

(b) Meanwhile the choleric captain strode wrathful away to the council.

(c) And the night shall be filled with music
And the cares that infest the day
Shall fold their tents like the Arabs
And as silently steal away.

10 Make an outline for an essay on one of the following topics, and write the introductory paragraph of the essay you outline: (a) Life on a farm; (b) Poetry written for children. 11 Select *one* of the following poems and give the author and time when the poem was written the real subject or purpose of the poem, the plan of the poem (a) The Deserted Village; (b) Lycidas; (c) Sohrab and Rustum. 12 Discuss *one* of the following: (write about 150 words) (a) Ruskin as a master of prose; (b) The use of mythology in literature. 13 (a) Give four distinct arguments in favor of the study of the masterpieces of literature in secondary schools aside from the pleasure afforded to the student. (b) What is the chief object in the study of the history of literature? 14 Contrast the fiction of the past decade with that written 50 years ago, discussing (a) difference in style; (b) difference in motive. 15 Mention four *famous* translators of well-known classics, two English and two American, and discuss the most important translation of each. 16 Mention the author of *each* of the following and comment on the form in which each is written and the literary value of each: (a) The Cloud; (b) Pamela, or Virtue Rewarded; (c) Lives of the Hunted; (d) Layamon's "Brut;" (e) Vision of Sir Launfal. 17 Describe the friendship of Coleridge and Lamb and its effect upon the works of either or both; *or*, Show how the character and

life of Charles Dickens are reflected in his works. 18 Name the author of each of the following addresses and outline the circumstances under which each was delivered: (a) Gettysburg Address; (b) Conciliation with America; (c) First Bunker Hill Oration; (d) Commemoration Ode. 19 Give four characteristics of the poetry of *either* Tennyson *or* Wordsworth and cite, by quotation if possible passages to illustrate such characteristics. 20 To what age or period does Pope belong? Mention two prominent contemporaries of Pope. Show the historical situation and its influence upon the literature of the time.

Group 2 *Modern languages.— German.*— 1 Translate into English: (a) Aber das gnädige Fräulein wollte von dieser Ausnutzung ihres geliebten Parkes eben so wenig wissen, wie der Vater, wenn auch vielleicht aus einem anderen Grunde. Es wurde nicht sowohl ihren Stolz, als ihren poetischen Sinn verletzt haben, wenn man die alten Eichen und Buchen, über deren Wipfel sie so oft voller Entzücken die weissen Sommerwolken hatte hinsegeln sehen, umgehauen und zur Erde gebracht hätte. Dass hier Alles so blieb, wie es nun einmal war, und keine andere Hand, als die linde allmächtige Hand der Natur ihr Waldheiligtum berührte — diese Gewissheit gehörte zu den Requisiten der poetischen Welt, in welcher sich die junge Dame um so lieber und um so freier bewegte, je weniger sie — wenigstens in den letzten Jahren — von der wirklichen Welt zu sehen und zu hören bekam. (Roschen vom Hofe, Spielhagen.) (b) Egmont (im Begriff aufzufahren, nimmt sich zusammen, und spricht nach einer kleinen Pause gesetzt).— Nicht jede Absicht ist offenbar, und manches Mannes Absicht ist zu missdeuten. Muss man doch auch von allen Seiten hören, es sei des Königs Absicht weniger, die Provinzen nach einförmigen und klaren Gesetzen zu regieren, die Majestät der Religion zu sichern und einen allgemeinen Frieden seinem Volke zu geben, als vielmehr sie unbedingt zu unterjochen, sie ihrer alten Rechte zu berauben, sich Meister von ihren Besitztümern zu machen, die schönen Rechte des Adels einzuschränken, um derentwillen der Edle allein ihm dienen, ihm Leib und Leben widmen mag. Die Religion, sagt man, sei nur ein prächtiger Teppich, hinter dem man jeden gefährlichen Anschlag nur desto leichter ausdenkt. Das Volk liegt auf den Knieen, betet die heiligen gewirkten Zeichen an, und hinten lauscht der Vogelsteller, der sie burücken will.

(Egmont, Goethe.)

(c) So bist du schon im Hafen, alter Mann?
Ich nicht. Es treibt der ungeschwächte Mut
Nicht frisch und herrlich auf der Lebenswoge,
Die Hoffnung nenn' ich meine Göttin noch,
Ein Jüngling ist der Geist, und seh, ich mich,
Dir gegenüber, ja, so möcht' ich rühmend sagen
Dass über meinem braunen Scheitelhaar
Die schnellen Jahre machtlos hingegangen.
Wer nennt das Glück noch falsch? Mir war es treu,
Hob aus der Menschen Reihen mich heraus
Mit Liebe, durch des Lebens Stufen mich
Mit kraftvoll leichten Götterarmen tragend.

(Wallensteins Tod, Schiller.)

2 Translate into German: In all this time of doubt and fear one man was calm and hopeful — the great commander. Columbus knew well what the sailors were plotting, but he kept steadily on his course. And his faith was soon to be rewarded. For now, when the fleet had been out a month, real signs of land began to be seen. 3 Write original German sentences containing the following: separable verb, preposition governing the genitive, *auf* with the accusative, impersonal verb, superlative with *am*. 4 Rewrite the following sentences, changing the voice, not the tense, of the verbs and making the other necessary changes: (a) Rose hatte ihres Vaters Arm genommen. (b) Ich habe es mit wahrhaftem Schmerz bemerkt. (c) Abermals wird die Leiter angelegt. (d) Wenn ich von meinen Feinden gehasst würde, so würde ich sie nicht hassen. (e) Ich vergesse Niemand leicht, den ich einmal gesehen und gesprochen habe. 5 Translate the following sentences: (a) Man kann nicht

dahinter kommen. (b) Das hat nichts zu sagen. (c) Es ist mir um so lieber. (d) Was halten Sie davon? (e) Das geht Sie nichts an. 6 Write in German a sketch, containing not less than one hundred words, of the life and character of Goethe.

French.— 1 (a) What French works have you read? Where and under whom have you studied French? Do you speak French? (b) What objects of instruction are most important in first year French? In second year French? What should the pupil who has been well taught know at the close of two years' study of French? 2–3 Make both a literal and a literary translation of the following passage. Comment upon the two from the instructor's point of view. "Qui n'a pas vu Avignon du temps des Papes, n'a rien vu. Pour la gaieté, la vie, l'animation, le train de fêtes, jamais une ville pareille. C'était du matin au soir processions, pelerinages, les rues jonchées de fleurs, tapissées de hauteslices, des arrivages de cardinaux par le Rhône, bannières au vent, galères pavoisées, les soldats du Pape qui chantaient du latin sur les places, les crécelles des frères quêteurs; puis, du haut en bas des maisons qui se pressaient en bourdonnant autour du grand palais papal comme des abeilles autour de leur ruche, c'était encore le tictac des métiers à dentelles, le va-et-vient des navettes tissant l'or des chasubles, des petits marteaux des ciseleurs de burette, les tables d'harmonie qu'on ajustait chez les luthiers, les cantiques des ourdisseuses; par là-dessous le bruit des cloches, et toujours quelques tambourins qu'on entendait ronfler, là-bas, du côté du pont. Car chez vous, quand le peuple est content, il faut qu'il danse, il faut qu'il danse; et comme en ce temps-là les rues de la ville étaient trop étroites pour la farandole, fifres et tambourins se postaient sur le pont d'Avignon, au vent frais du Rhône, et jour et nuit l'on y dansait, l'on y dansait.....Ah! l'heureux temps! l'heureuse ville! Des hallebardes qui ne coupaient pas; des prisons d'Etat où l'on mettait le vin à refraîchir. Jamais de disette, jamais de guerre! Voila comment les Papes du Comtat savaient gouverner leur peuple; voila pourquoi peuple les a tant regrettés!" 4 Write in French: (a) A courageous man; a kind, good man. (b) That rope is thirty feet long. (c) The cat seems to think only of itself. (d) It is this man who is most faithful. (e) Whom do you want? (f) When one is in a country it is necessary to follows its customs. 5 Give the principal parts, including all participles, of the French verbs for *absolve, go, know, be necessary, will* (*be willing*). 6 Give twenty French words derived from Latin, giving also the Latin word and its meaning; *or*, Give as many idioms as you know for the use of any forms of *avoir, tenir, prendre.* 7 Write in French: (a) I could have won that victory if heaven had not willed to deprive me of the glory of it. (b) The inhabitants had abandoned the city before the enemy entered it. (c) Let him choose, if he will, France or Mexico. (d) Do not hope then any longer that any one will come to your aid. (e) Can it be denied that good morals are essential to the permanence of states? 8 Explain and illustrate the partitive construction: When is the article used in French when it would not be used in English? Give the different meanings, according to use, of *personne, rien, aucun, tout, tel, même, autre.* 9 Translate: "Amiel avait une habitude sans laquelle sa trace se serait probablement effacée assez vite dans les mémoires. Il confiait presque journellement au papier ses idées, ses agitations, ses plaintes. Là, comme dans un sanctuaire secret, il interrogait sa conscience, se replaçait en face des énigmes de la vie, se retrempait dans la méditation du devoir et dans la contemplation de l'infini. Exercise dangereux en ce qu'il risque d'exaspérer les tourments d'un esprit déjà porté à se replier sur lui-même, mais exercise qui sert quelquefois aussi à rétablir l'équilibre dans une âme en la forçant de ramener les choses à leur just mésure. Il y a de l'apaisement dans une confession faite la plume à la main; nous nous séparons de notre infortune en livrant au papier les griefs que nous avons contre le sort et contre nousmêmes. Amiel est resté fidèle à l'habitude dont je parle jusqu' aux derniers jours de sa vie, et il nous a laissée ainsi, avec la preuve d'un don supérieur a tout ce que nous avions soupçonné en lui, les ressources les plus précieuses pour

l'histoire de sa pensée. Ce sera l'un des faits curieux de l'histoire litteraire que la différence entre ce que l'on connaissait de notre ami et ce que l'on va savoir de lui. On l'avait cru stérile, et il est inépuisable; on lui avait reproché de perdre son temps à des jeux d'esprit, et l'on découvre chez lui une profondeur extraordinaire d'idées et de sentiments; on souffrait, dans sa manière d'écrire d'une sorte d'afféterie, et la forme ici devient large et parfois magnifique, mettant dans la philosophie tout ce que l'émotion personnelle peut lui communiquer d'eloquence. L'aisance et la force ont remplacé la recherche."—(*Edmond Scherer.*) 10 Give as many uses of the infinitive as you can and write a short sentence in French to illustrate each. 11 What types of French literature were important in the 11th, 12th and 13th centuries? Describe the types you mention and name several works which are examples of each. 12 Give a brief account of the characteristics of two French novelists and one poet of the present century; *or*, How does the criticism of Sainte-Beuve differ from that of earlier critics? 13 What do you understand by the classical drama in France? What were its limitations? Name *three* great dramatists of this school.

Spanish.— 1 (a) Where, under whom and how long have you studied Spanish? (b) What experience have you had in teaching Spanish? (c) What Spanish have you read? 2 Translate closely but into idiomatic English the following: (a) La conquista extendió los límites del reino, por una parte hasta el Océano de Galicia, por otra hasta las orillas del Duero y del Ebro; y este engrandocimiento fué el orígen de la desigualdad política y civil de las personas. Conquistáronse ciudades y villas de enemigos: otras, diruidas por la guerra, fueron reedificadas y repobladas; y se sabe que los Cristianos no extendían sus límites hasta que el territorio que ya poseían estuviese bien poblado y defendido por fortalezas. De aquí el nombre de Castilla que se dió primero al pais comprendido entre Duero y Ebro, lleno de pueblos fortificados: de aquí el nombre de Extremadura que se dió al principio á la frontera que formaba este rio, y que se extendió despues á todas las que se formaron en lo sucesivo hasta Sierra Morena. Era imposible que los habitantes cristianos de una ciudad arrancada al poder de los Moros, tuviesen los mismos derechos políticos que sus belicosos libertadores: esto dió lugar á la distincion entre nobles y plebeyos. Las Moros, prisioneros en los combates, quedaban esclavos de sus vencedores por el derecho de represalias; y á esta clase se agregó la de algunos Cristianos esclavos de la pena debida á sus delitos. Sucedía tambien que, conquistada alguna plaza, quedaban en ella, en virtud de la capitulacion, algunos Moros sometidos que conservaban los derechos concedidos por la capitulacion. Muchos de ellos pasaban á la clase de los plebeyos, convirtiendose al cristianismo.—(*Alberto Lista, "Del Regimen Municipal en España."*) (b) Cuando empezada la caminata dejaron á un lado las casuchas de villahorrenda, el caballero, que era jóven y de muy buen ver, habló de este modo: Dígame usted, Sr. Solón... Licurgo, para servir á usted... Eso es, Sr. Licurgo. Bien decía yo que era usted un sabio legislador de la antigüedad. Perdone usted la equivocación. Pero vamos al caso. Dígame usted, ¿como está me señora tía? Siempretan guapa — repuso el labriego, adelantando algunos pasos su caballería.— Parece que no pasan años por la señora doña Perfecta. Bien dicen que al bueno Dios le da larga vida. Así viviera mil años ese ángel del Señor. Si las bendiciones que la echan en la tierra fueran plumas la señora no necesitaría más alas para subir al cielo. ¿ Y mi prima la señorita Rosario? ¡ Bien haya quien á los suyos parece! — dijo el aldeano. ¿ Qué he de decirle de doña Rosarito, sino que es el vivo retrato de su madre? Buena prenda se lleva usted, caballero D. José, si es verdad, como dicen, que ha venido para casarse con ella. Tal para cual, y la niña no tiene tampoco por qué quejarse. Poco va de Pedro á Pedro.—(*Galdos's Doña Perfecta.*) 3 Give the principal parts (five, including participles) of the following verbs found in the above exercises: (a) Sabe, dió, tuviesen; (b) ver, vamos, repuso, dicen. 4 Give the synopsis in the third person singular of (a) "estuviese." 5 Explain how derived parts are formed from the five principal parts of the verb and illustrate by the verb "hablar." 6 Give the general rules for the comparison of adjectives. Compare: "bueno,"

"grande," "pequeño." 7 Translate into idiomatic Spanish: (a) What is the matter with you, my son? I am not well; I have a headache. (b) It is now twelve o'clock; your father left more than two hours ago. He will return to-morrow morning. 8 Write in English an article of at least 125 words upon *one* of the following subjects: Historical Sketch of the Spanish Language, The "Cid," Cervantes, Lope de Vega.

Group 3 *Ancient Languages — Latin.*— 1 Translate into English: (a) Quod si haec vox, huius hortatu praeceptisque conformata non nullis aliquando saluti fruit, a quo id accepimus quo ceteris opitulari alios servare possemus, huic profecto ipsi, quantum est situm in nobis, et opem et salutem ferre debemus. Ac ne quis a nobis hoc ita dici forte miretur, quod alia quaedam in hoc facultas sit ingenii neque haec dicendi ratio aut disciplina, ne nos quidem huic uni studio penitus umquam dediti fuimus. Etenim omnes artes, quae ad humanitatem pertinent, habent quoddam commune vinculum et quasi cognatione quadam inter se continentur.—(*Cicero, Pro Archia.*)

(b) Fas omne est, Cytherea meis te fidere regnis,
Unde genus ducis. Merui quoque; saepe furores
Compressi et rabiem tantam caelique marisque.
Nec minor in terris, Xanthum Simoentaque testor,
Aeneae mihi cura tui. Cum Troia Achilles
Exanimata sequens inpingeret agmina muris,
Milia multa daret leto, gemerentque repleti
Amnes, nec reperire viam atque evolvere posset
In mare se Xanthus, Pelidae tunc ego forti
Congressum Aenean nec dis nec viribus aequis
Nube cava rapui, cuperem cum vertere ab imo
Structa meis manibus periurae moenia Troiae.
—(*Virgil, Aeneid, Bk.* 5.)

(c) Quid enim est, per deos, optabilius sapientia, quid praestantius, quid nomini melius, quid homine dignius? Hanc igitur qui expetunt philosophi nominantur, nec quidquam aliud est philosophia, si interpretari velis, praeter studium sapientiae. Sapientia autem est, uta veteribus philosophis definitum est, rerum divinarum et humanarum causarumque, quibus eae res continentur, scientia, cuius studium qui vituperat haud sane intellego quidnam sit quod laudandum putet.—(*Cicero, De Officiis.*) 2 Translate into Latin: (a) Let them see to it that they do not make this man their enemy. (b) It is difficult to say what is the opinion of the people regarding it. (c) He announced to his forces that they would set out for Rome on the 24th of September. (d) Who in this assembly is so foolish as to believe it? (e) Do not entrust the care of your affairs to him unless you have confidence in him. 3 Explain and illustrate the use of the Latin gerundive instead of the gerund with an object. Explain the use of the subjunctive mode in relative clauses. 4 Mention two poetic uses of the accusative; of the dative; of the infinitive. Give the constructions used with comparatives. 5 Write notes on the syntax of the italic words in the following: Numquam igitur laudari satis digne philosophia poterit, cui qui *pareat* omne tempus aetatis sine molestia possit degere; Apud quem Laelium at Scipionem facimus admirantis, quod is tam facile senectutem *ferat;* Ceteri senes, Fabricii, Curii, Coruncanii, cum rem publicam consilio et auctoritate *defendebant,* nihil agebant? Tu *velim* a me animum parumper *avertas;* Propterea quasi cognomen iam habebat in senectate *sapientis.*

Greek.—1 Translate into English: (a) Xen. Anab. Book II, chap. 5, 20–23. (b) Xen. Anab. Book VI, chap. 4, 9. 2 Give the syntax of τρόπων, ἐξελοίμεθα, ἀπόρων, ἐξὸν, ἔχοι (a); δυνόδου (b). 3 Where formed and from what verbs are ἀπολέσαι, εἰπας, (a); συνενεγχόντες, ἐπέθεσαν (b)? 4 Compare αἰσχρός (a); μέγα (b). Conjugate ἐστί in the imperfect; οἶδα in the perfect indicative. 5 Write Greek sentences, not found in the above passages, illustrating: (a) Purpose clause (three distinct types), (b) Past contrary-to-fact condition, (c) Impersonal use of verbal in -τέος with expression of agent, (d)

Relative condition, future less vivid. 6 State three distinct uses of the adverb μέν. 7 Translate into Greek: He replied that he heard that Abrocomas a hostile man was at the Euphrates river, twelve stages distant; he said that he wished to go to him. "If he shall be there," he said, "it is necessary to inflict punishment on him; but if he shall flee we will take counsel there in respect to these things." 8 Relate the story of Achilles as told in the Iliad.

Group 4 Mathematics.—1 Find one-seventh of 1 acre 6 sq. rds. 4 sq. ft. 2 A certain bill of goods was marked at 25 per cent above cost. They were sold at trade discounts of 10% and 5%, and $58.50 was paid. What was the profit? 3 The diameter of the base of a right cylinder is 24 centimeters and the height is 64 centimeters. Find the volume of the cylinder and express the result in cubic meters. 4 Find the square root of 1034.2656, and explain the rule used. 5 Define and give examples: affected quadratic equation, surd, exponential equation, an incommensurable number, simultaneous equations. 6 Factor $x^6 + x^3y - x^2y^6 - y^7$ and $x^4 + 10x^2 - 2x^2y + y^2 - 10y + 25$. 7 Solve the equation: $4x^2 - 4\sqrt{4x^2 + 13} = 8$. 8 Find the logarithm of .81 to the base .8, given $\log_{10} 2 = .30103$; $\log_{10} 3 = .47712$. 9 Find the roots of the equation, $x^4 - 16x^2 - 9x + 36 = 0$. 10 Define: straight line, plane surface, tetrahedron, sector of a sphere, right cone. 11 Find the locus of the middle points of all secants that can be drawn to a given circumference from a fixed point without it. Prove your construction. 12 In terms of the radius of the circumscribed circle and a side of a regular polygon, derive an expression for the length of a side of a regular polygon of the same radius and double the number of sides. 13 Find the volume of a regular pyramid whose lateral edge is 12 feet and whose base is an equilateral triangle inscribed in a circle of radius 10 feet. 14 The volume of a sphere is equal to the product of the area of its surface by one-third its radius. Demonstrate. 15 Prove the relation: $\cos A + \cos B = 2 \cos \frac{1}{2}(A + B) \cos \frac{1}{2}(A - B)$. 16 Write down the necessary formulae, and then solve this triangle given two sides 40 and 60 yards and the included angle 100 degrees.

Group 5 Science.—Physics.—1 How much ice at 0° C. must be dissolved in a litre of water at 25° C. in order to reduce its temperature to 5° C.? 2 A stone is dropped into a dark mine by a person at the top, who hears six seconds later the sound made by the stone striking the bottom. How deep is the mine? 3 If the middle C on a piano gives 528 vibrations, how many vibrations should be given by the G above? Why is it impossible to put a piano into perfect tune? 4 Explain, using a diagram, why an object appears magnified under a single lens. 5 Explain or define the terms: (a) potential; (b) electrolysis; (c) cathode; (d) electromagnetic unit; (e) isogonic lines; (f) lines of magnetic force; (g) polarization of a cell; (h) hysteresis; (i) galvanoscope; (j) watt.

Chemistry.—1 State and explain Mendeleef's Periodic Law. Of what service has it been to the advancement of chemical research? 2 Describe the blow pipe flames both reducing and oxidizing; how is each produced and for what is each used? 3 Describe the process of producing iron from its ores, explaining the chemical reactions that occur. What properties are given iron by addition of (a) manganese; (b) carbon; (c) sulphur? 4 How much by weight, of carbon dioxide can be made from ten pounds of pure chalk? Given the following atomic weights: Ca = 40, C = 12, O = 16, S = 32. 5 In the qualitative chemical analysis of a substance, other than a metal or alloy, a preliminary test may be made with concentrated sulphuric acid. What would be the characteristic results given by the following classes of compounds: (Answer any *five*) (a) acetates; (b) bromides; (c) chlorates; (d) fluorides; (e) iodides; (f) nitrates; (g) sulphides; (h) sulphites?

Physical geography.—1 Describe five modes of island formation. 2 (a) What is the cause of winds? (b) Account for the direction of the trade winds. (c) Mention five beneficial effects of winds. 3 Upon what does the climate of a place depend? Account for the climate of each of the following

places: San Francisco, Newfoundland, London, Desert of Sahara. 4 Give the nebular hypothesis. 5 (a) Describe the development of a river valley. (b) Describe two modes of lake formation.

Botany.—1 Define five of the following terms: inflorescence, embryo, archegonium, ecology, prothallium, tissue, histology. 2 Make a drawing of a characteristic plant-cell; name the various parts and explain how the cell grows and reproduces. 3 Explain in detail the processes involved in the formation of the potato tuber. 4 Discuss the significance of the terms *species* and *genus*. 5 Give the life history of a moss plant.

Physiology and hygiene.—1 Name and trace five pairs of cranial nerves. 2 Explain the processes involved in the production of energy in the body. 3 Discuss the effect of physical exercise on (a) the muscles; (b) the nervous system; (c) the digestive organs. 4 Discuss the theory of vaccination. 5 Describe the circulation of the blood.

Group 6 History.—Answer 12 of the following questions: 1 (a) Which American Colony is regarded as the home of constitutional government? (b) Which, as the home of religious liberty? (c) Distinguish between Pilgrim and Puritan? (d) Which left the stronger impress on New England history? (e) Give reasons for your answer. 2 (a) What was the leading cause of the Revolutionary war? (b) What was the ground of American resistance prior to July 4, 1776? (c) Distinguish between rebellion and revolution. 3 Briefly sketch the services of the U. S. navy rendered in time of war to the present time. 4 Discuss the subject, "Slavery in the United States" with reference to: (a) the value of slave labor; (b) the importation of slaves; (c) the admission of states; (d) slavery as a cause of the Rebellion; (e) the abolition of slavery in the United States. 5 Discuss modern inventions as affecting, (a) the governing of a nation; (b) the building of large cities; (c) the price of food products; (d) the cost of manufactured goods; (e) general intelligence. 6 Mention, giving the date of adoption, the different constitutions of the state of New York and mention one change made by each constitution. What was the origin of the common school fund of New York? Name the four oldest cities of the state. 7 Name five men in New York state prominent as journalists and the journals with which they were connected: five men of political prominence prior to 1860. 8 Sketch briefly the contests for supremacy between Greece and Persia. Give your estimate of the result of these contests upon the world's history. 9 Contrast the states of Sparta and Athens. What were the causes of the Peloponnesian war? How long did the war continue, and what were its results? 10 Give an account of the subjugation of Greece by Rome, noting causes, principal stages and results. 11 Compare Rome and Carthage before the first Punic war. How long did these wars continue? Describe the campaign of Hannibal and the origin of the "Fabian" policy. 12 Contrast the characters of Caesar and Pompey. What was the immediate cause of the civil war between these generals? State the result. 13 Give a sketch of Alfred the Great, touching upon (a) his descent and character; (b) his wars; (c) the terms of the treaty by which these wars were concluded; (d) his scholarship; (e) his naval successes. 14 Sketch the rise of the Norman power. State the policy of William the Conqueror as regards (a) the granting of estates in England; (b) his dealing with assassinations. (c) What was the Great Survey? (d) What the Great Meeting of 1086? 15 Sketch the rise of English commerce. Wherein was English commerce a cause of bringing on the Hundred Years' War? What were the effects of this war upon the English people? Upon the people of France? 16 Sketch the reign of Elizabeth, giving special attention to (a) her position on religious questions; (b) the prosperity and growth of the nation during her reign; (c) learning and letters; (d) how the common people lived. 17 What was meant by "The third estate?" What French ruler was called the father of his people? Give a brief sketch of Catherine de Medici. 18 Sketch the war of the Spanish Succession with special reference to the following: (a) causes; (b) nations involved

and commanders; (c) battles of this war; (d) what event terminated the war? (e) terms of settlement. 19 What is meant by the Code Napoleon and what has been its influence? What was the general and what the direct cause of the Franco-Prussian war? 20 Contrast the governments of France and England down to the time of Louis XVI. Show that a great revolution was the logical result in one country and not in the other.

Group 7 Civics and economics.—Civics.—1 Name the principal executive departments of the state government and give a brief outline of the work of each. 2 Name the courts of the federal government and explain the jurisdiction of each. 3 Give an account of the monetary system of the United States. 4 Explain the jurisdiction of the city government, the state government and the federal government in New York city and harbor.

Economics.—1 Give an account of the writings of (a) Adam Smith; (b) Henry George. 2 Discuss the circumstances which determine the rate of interest. 3 State two leading theories of rent. 4 Define the following terms: seignorage, entrepreneur, balance of trade, division of labor. 5 Discuss the following proposition: "The true unit in the comparison of wages is the family." 6 Give an account of the causes which produced the panic of 1873. How could this panic have been averted? 7 Name and describe the various kinds of money in use in the United States. State how each of these is kept on par with gold. 8 Discuss the economic effects of war. Why is a country usually prosperous in time of war? 9 Do the rich by indulging in luxuries benefit the laboring classes? Demonstrate your answer. 10 Discuss "trusts" from the economic standpoint.

Group 8 Pedagogy.—School law.—1 Who are entitled to vote at a school meeting? 2 In what ways are state funds allotted to the schools of the state? 3 State the procedure necessary to the establishment of a union free school. 4 Mention the various ways in which licenses to teach may be obtained in this state. 5 Discuss the status of religious exercises in the public schools of this state. 6 What are the powers and duties of the Superintendent of Public Instruction?

Methods.—1 Explain briefly the meaning of the following quotation: "The thought in the thing and the law in the mind determine the method." 2 Give in proper order the steps of an induction. 3 Distinguish between general notions or concepts, and special notions, or percepts. Illustrate. 4 What bearing has the nature of general notions on the function and place of laboratory work in science teaching? 5 What bearing has the principle of apperception in determining the need and place of a first hand study of the geography of the home locality in geography teaching? Illustrate. 6 Explain what is meant by (a) preparation; (b) presentation; (c) application work, in teaching a pupil a new general notion. 7 What has the principle of association to do with the value and need of application work following presentation? 8 (a) Distinguish between empirical interest and speculative interest. (b) Which is developed earlier in the child?

School economy.—1 (a) Distinguish between (1) method; (2) Class management; (3) discipline. (b) Under which of the above heads would you class (1) the seating of the pupils; (2) questioning; (3) avoidance of whispering? Give *one* additional illustration under each head. 2 Have the method and class management employed any bearing upon the problem of securing good order? Discuss briefly. 3. Give two reasons in favor of having a set of "rules" whose disobedience constitutes a disdemeanor on the part of the pupil. Give two reasons against such rules. 4 Do the comfort and pleasantness of the school room sustain any relation to good order? Give reasons for your answer. 5 How may the school discipline be made to result in self-control on the part of the pupil? Give three suggestions.

History of education.—1 What marked change from the past characterized the system of education that had its rise at the period of the Reformation?

2 To what period does Comenius belong? Name two of his most important works. What do you consider to be one of his chief contributions to education? 3 (a) What was the purpose and effect of the Emile? (b) Who was its author? 4 (a) What was Pestalozzi's mission as an educator? (b) In what sense were his schools a success? a failure? 5 (a) What was Froebel's greatest contribution to education? (b) With what other great educational genius was he contemporary? 6 What can you say of the doctrine of Herbart as to (a) the aim of education; (b) the basal sciences of education; (c) the six kinds of interest? 7 (a) What changes have taken place in our educational system in the past fifty years with regard to (1) co-education; (2) employment of women teachers; (3) development of free schools? (b) Do you consider these features at all interrelated? If so, how? 8 (a) Compare briefly the value ascribed to natural sciences and the classics as instruments of education at the beginning of the 19th century with the value accredited to them at its close. (b) To what do you attribute the change?

Art of questioning.—1 Name three different purposes for which questions may be employed by the teacher. 2 Give two suggestions as to the kind of questions most desirable in a final quiz? 3 State three qualities essential to a good question. 4 Should the teacher make a practice of repeating the pupil's answer to a question? Why? 5 Should the class or the pupil reciting ever be left in doubt as to the correctness of an answer given? State a reason for your answer.

Special examinations

There are many special and technical positions in the state service in which vacancies are of infrequent occurrence and for which examinations are held only when vacancies occur. As to such examinations no detailed information can ordinarily be given in advance of the advertisement of examination. For most of these positions the examination consists entirely of questions upon the duties of the position the technical knowledge required for their performance. and the experience, education, special training and personal qualifications of candidates. A partial list of such examinations held in the past is given below. *No specimen questions for such examinations can be furnished,* nor will the subjects of examination and relative weights necessarily be the same in future examinations of similar character, as the Commission will be governed by the immediate needs of the service at the time the examinations are called.

Band instructor, state hospitals and institutions. $60 to $70 a month and maintenance. Subjects of examination and relative weights: Written examination covering organization and instruction of band, instrumentation, arrangement of scores, etc., 4; experience, education and musical training,6.

Director of trade schools, state reformatory at Elmira. $1,200 and room. Subjects of examination and relative weights: Algebra and geometry, 1; machine designs, 1; free-hand and mechanical drawing, 2; practical exercises in wood and metal working, 3; experience and education, 3.

Examiner, State Civil Service Commission. $1,000. Open to men and women. The principal work is the preparation of questions and rating of papers in civil service examinations. Considerable clerical work is also required. Candidates must be graduates of a high school or have an equivalent education according to the standard of the Regents. Additional credit will be given for college, university, technical or professional education or for experience which will be useful in the work of the position. Subjects of examination and relative weights: Rapid computation (test for speed and accuracy in addition, subtraction, multiplication, division, fractions, decimals and simple percentage), 2; United States history and civics, 2; arithmetic and elementary algebra, including the metric system, mensuration and the use of logarithms, 3; essay (choice of two assigned topics relating to the public service and the merit system), 3; preparation of questions and rating of answers (principles and their application to actual cases), 3; education, 4; experience, 3.

Head teacher of music, state school for the blind. Open to both sexes. $900 and maintenance. Subjects of examination and relative weights: Experience and education, 4; practical questions and practical tests relating to the duties of the position, including voice, piano and organ, 6.

Head teacher, state school for the blind, Batavia. $700 to $900 and maintenance for the school year. Open to men only. Candidates must possess a second grade certificate in force under the rules of the department of education or its equivalent. Subjects of examination and relative weights: First year Latin and Caesar, 3; methods, 3; physics and physical geography or physics and geology or United States history, economics and civics or algebra and geometry, 4. Candidates must specify at the time of application which of the groups of subjects last named they desire to be examined in.

Head teacher, state prisons. $1,000 to $1,200. Open only to regularly licensed male teachers over 25 years of age who are graduates of a college of recognized standing, a New York state normal or city training school or have an equivalent training. Candidates are rated on their personal and educational qualifications, success and experience as shown by their experience statements and by replies to letters of inquiry sent by the commission to their former superiors and others acquainted with their character and work.

Inspector, department of public instruction. Open to men only. $1,800. Candidates must have had not less than three years' successful experience as teachers in the public schools of New York state. Subjects of examination and relative weights: Professional examination—methods and principles of education, school economy (including school hygiene, school management, buildings, equipment, etc.), school law, and special duties of the position, 4; scholastic examination—American history and civics and English, 2; experience and education, 4.

Instructor in library school, state library. Salary, $125 a month, for about six months annually. Open to women only. Candidates must be college graduates and should have had successful experience of 8 or 10 years in library work, such as head of a large town or city public library. In addition, ability as a teacher and as a public speaker is requisite. The duties are to instruct in the library school and to conduct library institutes. Subjects of examination and relative weights: Library economy, with especial reference to the usefulness of libraries and their relation to the public, conduct of institutes, methods of instruction, etc., 6; experience, education and special training, 4.

Lecturer, education department. $2,500. The duties are to act as lecturer and instructor for the education department at farmers' institutes and other duties connected with the inspection and examination work of the department as assigned. The positions require men of sound scholarship, college graduates preferred with practical experience in teaching, familiarity with courses of study and details of management of both elementary and secondary schools, ability to inspect and judge accurately the work in all grades of schools, and adaptability and experience to speak in public and represent the department at the institutes. Subjects of examination and relative weights: Methods and principles of education, school economy (including school hygiene, school management, buildings, equipment, etc.), school law, history of education, special duties of the position, 5; experience, education and personal qualifications, 5.

Librarian, court of appeals library, Syracuse. Subjects of examination and relative weights: Practical questions on the management and use of a law library, 8; experience, education and personal qualifications, 2.

Library assistant in sociology, state library. $1,200. Open to men only. Subjects of examination and relative weights: Administrative and constitutional law, private law, discussion of social and economic problems, 8; education, special training and experience, 2.

Librarian, second judicial district law library, Newburgh. $600. Subjects of examination and relative weights: Spelling, 1; letterwriting, 1; penmanship, 1; questions on law reports and textbooks, their care and classification, 5; education and experience, 2. Residents of the second judicial district will be preferred in certification.

Military instructor, state institutions. $1,200 and maintenance. Subjects of examination and relative weights: Military tactics, discipline and instruction, and their application to reformatory institutions, 5; reformatory institution methods and discipline, 2; experience, education and special training, 3.

Sub-inspector of public libraries, education department. $1,200. Open to men and women. Candidates should have both college and technical library education, good address, and ability to speak in public upon library affairs. Subjects of examination and relative weights: Library work, including cataloguing, indexing, classification, library economy and bibliography, state library law, Regents' ordinances affecting public libraries, museums, study clubs, and extension teaching, the general theory of the scope of public libraries, their relation to schools and place in the social system, 7; education, experience and personal qualifications, 3.

Superintendent, state school for the blind. Open to men only. $2,000 and maintenance. Subjects of examination and relative weights: Practical questions on the duties of the position, objects and methods of instruction and management of institution, 5; experience, education and special training, 5.

Teacher of piano tuning, state school for the blind. $800 and maintenance. Open to men only. This examination consists principally of practical tests in tuning, and questions relating to mechanism and repair of pianos.

TRADE POSITIONS, ETC.

Candidates for the positions mentioned below have not been required to appear at any place for examination but have been rated on their education, special training, experience and personal qualifications as shown by their sworn statements and by the answers to inquiries made by the Commission of their former employers and others acquainted with their work and accomplishments and in some cases upon duly authenticated specimens of their work submitted in conformity with instructions issued by the Commission.

Positions for men

Instructors in blacksmithing, bookbinding, brass-smithing, brick-laying, cabinet making, carpentry, clay-modeling, engraving, freehand drawing, machine wood-working, machinery, manual training, masonry, molding, painting, pattern-making, photography and photo-engraving, plumbing, printing, shoemaking, sloyd, steam and gas fitting, tailoring, tinsmithing, upholstering, wood carving. Usual salary $65 a month and maintenance, at the Elmira Reformatory, Rochester Industrial School and Craig Colony for Epileptics at Sonyea; in the prisons, $2.50 to $3 a day.

Physical instructor. Elmira Reformatory, $780, Rochester Industrial School and Batavia School for the Blind, $600 and maintenance.

Positions for women

Instructors in cooking, dressmaking, manual training, physical instructor. $40 to $45 a month and maintenance.

Instructors in laundering, sewing. $30 a month and maintenance. The positions are located at the Newark State Custodial Asylum, Syracuse Institution for Feeble-Minded Children, Batavia State School for the Blind, Houses of Refuge and Reformatories for Women at Albion, Bedford and Hudson, and Thomas Asylum for Indian Children at Iroquois.

Music teacher, state institutions. Open to men and women. **$300 to $600** a year and maintenance.

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